NEWPARK DRILLING FLUIDS

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** **BARITE POWDER**

**Synonyms** BARITE (API 13A SECTION 7) ● NEWBAR ● RHEOBAR

### 1.2 Uses and uses advised against

**Uses** DRILLING FLUID ADDITIVE ● WEIGHTING AGENT

### 1.3 Details of the supplier of the product

**Supplier name** **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

**Address** 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

**Telephone** +61 8 9410 8200

**Fax** +61 8 9410 8299

**Website** www.newpark.com

### 1.4 Emergency telephone numbers

**Emergency** 1800 127 406 (Australia); +64 4 917 9888 (International)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

### 2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

### 2.3 Other hazards

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|---|---|---|---|
| BARIUM SULPHATE | 7727-43-7 | 231-784-4 | >89% |
| QUARTZ (CRYSTALLINE SILICA) | 14808-60-7 | 238-878-4 | <3% |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye** If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation** If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

**Skin** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

**Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

**First aid facilities** Eye wash facilities should be available.

### 4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

### 4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

### 5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (sulphur oxides) when heated to decomposition.

### 5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

### 5.4 Hazchem code

None allocated.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

### 6.2 Environmental precautions

Prevent product from entering drains and waterways.

### 6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

### 6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

### 7.3 Specific end uses

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

**Exposure standards**

| Ingredient | Reference | TWA | | STEL | |
|---|---|---|---|---|---|
| | | ppm | mg/m³ | ppm | mg/m³ |
| Barium sulphate | SWA [AUS] | -- | 10 | -- | -- |
| Barium sulphate (inhalable) | SWA [Proposed] | -- | 4 | -- | -- |
| Barium sulphate (respirable) | SWA [Proposed] | -- | 1.35 | -- | -- |
| Quartz (respirable dust) | SWA [AUS] | -- | 0.1 | -- | -- |
| Quartz (respirable dust) | SWA [Proposed] | -- | 0.05 | -- | -- |
| Quartz (respirable dust) | WorkSafe VIC | -- | 0.05 | -- | -- |

**Biological limits** No Biological Limit Value allocated.

### 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

**PPE**

**Eye / Face** Wear dust-proof goggles.

**Hands** Wear PVC or rubber gloves.

**Body** When using large quantities or where heavy contamination is likely, wear coveralls.

**Respiratory** Where an inhalation risk exists, wear a Class P1 (Particulate) respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | OFF-WHITE POWDER |
| **Odour** | ODOURLESS |
| **Flammability** | NON FLAMMABLE |
| **Flash point** | NOT RELEVANT |
| **Boiling point** | NOT RELEVANT |
| **Melting point** | > 1300°C |
| **Evaporation rate** | NOT RELEVANT |
| **pH** | 8.2 (20% Slurry) |
| **Vapour density** | NOT RELEVANT |
| **Specific gravity** | 4.20 |
| **Solubility (water)** | INSOLUBLE |
| **Vapour pressure** | NOT RELEVANT |
| **Upper explosion limit** | NOT RELEVANT |
| **Lower explosion limit** | NOT RELEVANT |
| **Partition coefficient** | NOT RELEVANT |
| **Autoignition temperature** | NOT RELEVANT |
| **Decomposition temperature** | NOT RELEVANT |
| **Viscosity** | NOT RELEVANT |
| **Explosive properties** | NOT EXPLOSIVE |
| **Oxidising properties** | NON OXIDISING |
| **Odour threshold** | NOT RELEVANT |

### 9.2 Other information

| | |
|---|---|
| **Bulk density** | ~1.5 kg/L |

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity
Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability
Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

### 10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials
Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), heat and ignition sources.

### 10.6 Hazardous decomposition products
May evolve toxic gases (sulphur oxides) when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects
**Acute toxicity** Based on available data, the classification criteria are not met.

**Information available for the ingredients:**

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| BARIUM SULPHATE | > 5000 mg/kg (rat) | > 2000 mg/kg (rat) | -- |

**Skin** Contact may result in irritation, redness, pain and rash.

**Eye** Contact may result in irritation, lacrimation, pain, redness and blurring or dimness of vision.

**Sensitisation** Not classified as causing skin or respiratory sensitisation.

**Mutagenicity** Not classified as a mutagen.

**Carcinogenicity** Crystalline silica is classified as carcinogenic to humans (IARC Group 1). However, there is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis.

**Reproductive** Not classified as a reproductive toxin.

**STOT - single exposure** Over exposure may result in irritation of the nose and throat, coughing, dizziness, drowsiness and headache.

**STOT - repeated exposure** Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

**Aspiration** Not classified as causing aspiration.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity
Fish Toxicity: LC50 (Rainbow trout) > 7500 ppm/96hrs; LC50 (Fresh Water Trout) > 21,000 ppm/96hrs; LC50 (Salt Water Stickel Back) > 56,000 ppm/96hrs.

### 12.2 Persistence and degradability
Barium sulphate (major ingredient of barite (60-100%)) is insoluble in water and not biodegradable.

### 12.3 Bioaccumulative potential
Not expected to bioaccumulate.

### 12.4 Mobility in soil
No information provided.

### 12.5 Other adverse effects
This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Dispose of to an approved landfill or waste processing site. Contact the manufacturer/supplier for additional information (if required).

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

| | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|---|---|---|---|
| **14.1 UN Number** | None allocated. | None allocated. | None allocated. |
| **14.2 Proper Shipping Name** | None allocated. | None allocated. | None allocated. |
| **14.3 Transport hazard class** | None allocated. | None allocated. | None allocated. |
| **14.4 Packing Group** | None allocated. | None allocated. | None allocated. |

### 14.5 Environmental hazards

No information provided.

### 14.6 Special precautions for user

**Hazchem code** None allocated.

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

**Inventory listings** **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

## 16. OTHER INFORMATION

**Additional information**

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

**[ End of SDS ]**

NEWPARK DRILLING FLUIDS

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** **NEWZAN D**

**Synonyms** NEWZAN D ● XANTHAN GUM (BIOPOLYMER) ● XANTHAN GUM (P)

### 1.2 Uses and uses advised against

**Uses** DRILLING FLUID ADDITIVE ● VISCOSITY MODIFIER

### 1.3 Details of the supplier of the product

**Supplier name** **NEWPARK DRILLING FLUIDS (NEW ZEALAND) LTD**

**Address** PO BOX 6092, Moturoa, New Plymouth, TARANAKI, 4310, NEW ZEALAND

**Telephone** 0204 0234 734

**Fax** +61 8941 08299

**Website** www.newpark.com

### 1.4 Emergency telephone numbers

**Emergency** 0800 243 622 (New Zealand); +64 4 917 9888 (International)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

NON HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

### 2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

### 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|---|---|---|---|
| XANTHAN GUM | 11138-66-2 | 234-394-2 | >90% |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye** If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation** If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

**Skin** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

**Ingestion** For advice, contact the National Poisons Centre on 0800 764 766 (0800 POISON) or +643 479 7248 or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

**First aid facilities** Eye wash facilities and safety shower should be available.

### 4.2 Most important symptoms and effects, both acute and delayed

Adverse effects not expected from this product under normal conditions of use.

### 4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media
Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways.

### 5.2 Special hazards arising from the substance or mixture
Combustible. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Finely divided dust may form explosive mixtures with air.

### 5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

### 5.4 Hazchem code
None allocated.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

### 6.2 Environmental precautions
Prevent product from entering drains and waterways.

### 6.3 Methods of cleaning up
Contain spillage, then collect and place in suitable containers for reuse or disposal. Avoid generating dust.

### 6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled and tightly closed when not in use.

### 7.3 Specific end uses
No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters
**Exposure standards**

No exposure standards have been entered for this product.

**Biological limits**

No biological limit values have been entered for this product.

### 8.2 Exposure controls
**Engineering controls** Avoid inhalation. Use in well ventilated areas.

**PPE**

| | |
|---|---|
| **Eye / Face** | Wear dust-proof goggles. |
| **Hands** | Wear PVC or rubber gloves. |
| **Body** | When using large quantities or where heavy contamination is likely, wear coveralls. |
| **Respiratory** | Wear a Class P1 (Particulate) respirator. Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | LIGHT BEIGE POWDER |
| **Odour** | SLIGHT ODOUR |
| **Flammability** | COMBUSTIBLE |
| **Flash point** | NOT RELEVANT |
| **Boiling point** | NOT AVAILABLE |
| **Melting point** | NOT AVAILABLE |
| **Evaporation rate** | NOT AVAILABLE |
| **pH** | NOT AVAILABLE |
| **Vapour density** | NOT AVAILABLE |
| **Specific gravity** | 1.5 |
| **Solubility (water)** | MISCIBLE |
| **Vapour pressure** | NOT AVAILABLE |
| **Upper explosion limit** | NOT RELEVANT |
| **Lower explosion limit** | NOT RELEVANT |
| **Partition coefficient** | NOT AVAILABLE |
| **Autoignition temperature** | NOT AVAILABLE |
| **Decomposition temperature** | NOT AVAILABLE |
| **Viscosity** | NOT AVAILABLE |
| **Explosive properties** | NOT AVAILABLE |
| **Oxidising properties** | NOT AVAILABLE |
| **Odour threshold** | NOT AVAILABLE |

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites) and acids (e.g. nitric acid).

### 10.6 Hazardous decomposition products

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

| | |
|---|---|
| **Acute toxicity** | This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated. |
| **Skin** | Not classified as a skin irritant. Contact may result in mild irritation. |
| **Eye** | Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness. |
| **Sensitisation** | Not classified as causing skin or respiratory sensitisation. |
| **Mutagenicity** | No evidence of mutagenic effects. |
| **Carcinogenicity** | No evidence of carcinogenic effects. |
| **Reproductive** | No relevant or reliable studies were identified. |
| **STOT - single exposure** | Not classified as causing organ damage from single exposure. |
| **STOT - repeated exposure** | Not classified as causing organ damage from repeated exposure. |
| **Aspiration** | This product does not present an aspiration hazard. |

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity
No information provided.

### 12.2 Persistence and degradability
No information provided.

### 12.3 Bioaccumulative potential
No information provided.

### 12.4 Mobility in soil
No information provided.

### 12.5 Other adverse effects
No information provided.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste disposal** | Ensure product is covered with moist soil to prevent dust generation and dispose of to approved Council landfill. Contact the manufacturer/supplier for additional information (if required). |
| **Legislation** | Dispose of in accordance with relevant local legislation. |

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA**

| | LAND TRANSPORT (NZS 5433) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|---|---|---|---|
| **14.1 UN Number** | None allocated. | None allocated. | None allocated. |
| **14.2 Proper Shipping Name** | None allocated. | None allocated. | None allocated. |
| **14.3 Transport hazard class** | None allocated. | None allocated. | None allocated. |
| **14.4 Packing Group** | None allocated. | None allocated. | None allocated. |

### 14.5 Environmental hazards
No information provided.

### 14.6 Special precautions for user
**Hazchem code** None allocated.

## 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Approval code** NON HAZARDOUS

**Group standard** NON HAZARDOUS

**Inventory listings** **NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals)**
All components are listed on the NZIoC inventory, or are exempt.

## 16. OTHER INFORMATION

**Additional information**

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CCID | Chemical Classification and Information Database (HSNO) |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| EPA | Environmental Protection Authority [New Zealand] |
| GHS | Globally Harmonized System |
| HSNO | Hazardous Substances and New Organisms |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

**[ End of SDS ]**

NEWPARK DRILLING FLUIDS

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** **BENTONITE POWDER**

**Synonyms** AVAGEL ● BENTONIL HR ● HISWELL ● MAXIGEL ● NATURALGEL ● NEWGEL ● RHEOBEN ● RHEOBEN NT ● SODIUM BENTONITE ● SODIUM MONTMORILLONITE

### 1.2 Uses and uses advised against

**Uses** DRILLING FLUID

### 1.3 Details of the supplier of the product

**Supplier name** **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

**Address** 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

**Telephone** +61 8 9410 8200

**Fax** +61 8 9410 8299

**Website** www.newpark.com

### 1.4 Emergency telephone numbers

**Emergency** 1800 127 406 (Australia); +64 4 917 9888 (International)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

**Physical Hazards**

Not classified as a Physical Hazard

**Health Hazards**

Specific Target Organ Toxicity (Repeated Exposure): Category 2

**Environmental Hazards**

Not classified as an Environmental Hazard

### 2.2 GHS Label elements

**Signal word** **WARNING**

**Pictograms**

**Hazard statements**

H373 May cause damage to organs through prolonged or repeated exposure.

**Prevention statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

**Response statements**

P314 Get medical advice/attention if you feel unwell.

**Storage statements**

None allocated.

**Disposal statements**

P501 Dispose of contents/container in accordance with relevant regulations.

### 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|---|---|---|---|
| BENTONITE | 1302-78-9 | 215-108-5 | 90 to 98% |
| QUARTZ (CRYSTALLINE SILICA) | 14808-60-7 | 238-878-4 | 2 to 10% |
| SODA ASH | - | - | 2 to 4% |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye** If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation** If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

**Skin** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

**Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

**First aid facilities** Eye wash facilities and safety shower should be available.

### 4.2 Most important symptoms and effects, both acute and delayed

Repeated exposure to crystalline silica may result in lung fibrosis (silicosis). Principal symptoms of silicosis are coughing and breathlessness. Crystalline silica is classified as carcinogenic to humans (IARC Group 1).

### 4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

### 5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases if strongly heated.

### 5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

### 5.4 Hazchem code

None allocated.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

### 6.2 Environmental precautions

Prevent product from entering drains and waterways.

### 6.3 Methods of cleaning up

Moisten with water to prevent a dust hazard and place in sealable containers for disposal.

### 6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure packaging are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills.

### 7.3 Specific end uses
No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters
**Exposure standards**

| Ingredient | Reference | TWA | | STEL | |
|---|---|---|---|---|---|
| | | ppm | mg/m³ | ppm | mg/m³ |
| Quartz (respirable dust) | SWA [AUS] | -- | 0.05 | -- | -- |
| Quartz (respirable dust) | WorkSafe VIC | -- | 0.05 | -- | -- |

**Biological limits** No Biological Limit Value allocated.

### 8.2 Exposure controls
**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

**PPE**

| | |
|---|---|
| **Eye / Face** | Wear dust-proof goggles. |
| **Hands** | Wear PVC or rubber gloves. |
| **Body** | When using large quantities or where heavy contamination is likely, wear coveralls. |
| **Respiratory** | Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | BROWN POWDER |
| **Odour** | SLIGHT ODOUR |
| **Flammability** | NON FLAMMABLE |
| **Flash point** | NOT RELEVANT |
| **Boiling point** | NOT AVAILABLE |
| **Melting point** | 1100°C to 1200°C (Fusion Point) |
| **Evaporation rate** | NOT AVAILABLE |
| **pH** | NOT AVAILABLE |
| **Vapour density** | NOT AVAILABLE |
| **Specific gravity** | 2.7 |
| **Solubility (water)** | INSOLUBLE |
| **Vapour pressure** | NOT AVAILABLE |
| **Upper explosion limit** | NOT RELEVANT |
| **Lower explosion limit** | NOT RELEVANT |

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Partition coefficient** | NOT AVAILABLE |
| **Autoignition temperature** | NOT AVAILABLE |
| **Decomposition temperature** | NOT AVAILABLE |
| **Viscosity** | NOT AVAILABLE |
| **Explosive properties** | NOT EXPLOSIVE |
| **Oxidising properties** | NON OXIDISING |
| **Odour threshold** | NOT AVAILABLE |

### 9.2 Other information

| | |
|---|---|
| **Bulk density** | ~ 0.9 kg/L |

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible with acids (e.g. nitric acid) and alkalis (e.g. sodium hydroxide).

### 10.6 Hazardous decomposition products

May evolve toxic gases if heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity**

Toxicity Data available for the ingredients:
QUARTZ (SILICA CRYSTALLINE) (14808-60-7):
LCLo (inhalation) = 300 ug/m³/10 years (human)
TCLo (inhalation) = 16 000 000 particles/ft3/8 hours/17.9 years (human-fibrosis)
BENTONITE (1302-78-9):
LD50 (intravenous) = 35 mg/kg (rat)
LD50 (oral): > 2000mg/kg (rat)
LDLo (intravenous) = 10 mg/kg (dog)
Inhalation LC 50: > 5.27 mg/L, 4hr (rat)

**Additional ingredient toxicity values:**

BENTONITE (1302-78-9)

| | |
|---|---|
| LD50 (intravenous) | 35 mg/kg (rat) |
| LDLo (intravenous) | 10 mg/kg (dog) |

**Skin**

Not classified as a skin irritant. Contact may result in mild irritation and dermatitis.

**Eye**

Not classified as an eye irritant. Contact may cause discomfort, lacrimation and redness.

**Sensitisation**

Not classified as causing skin or respiratory sensitisation.

**Mutagenicity**

Insufficient data available to classify as a mutagen.

**Carcinogenicity**

This product contains crystalline silica which is classified as carcinogenic to humans (IARC Group 1). However, there is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis. Therefore, preventing the onset of silicosis will also reduce the cancer risk.

**Reproductive**

Insufficient data available to classify as a reproductive toxin.

**STOT - single exposure**

Not classified as causing organ damage from single exposure.

**STOT - repeated exposure**

Repeated exposure to respirable silica may result in pulmonary fibrosis (silicosis). Silicosis is a fibronodular lung disease caused by deposition in the lungs of fine respirable particles of crystalline silica. Principal symptoms of silicosis are coughing and breathlessness.

**Aspiration**

Not expected to present an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Bentonite (1302-78-9):
EC50 Daphnia > 100 mg/l, 48 hours
EC50 Freshwater algae > 100 mg/l, 72 hours
LC50 Freshwater fish = 16000 mg/l, 96 hours
LC50 Marine water fish = 2800 - 3200 mg/l, 24 hours
EC50 Coon stripe shrimp (Pandalus danae) = 24.8 mg/l, 96 hours
EC50 Dungeness or edible crab (Cancer magister) = 81.6 mg/l, 96 hours
LC50 Rainbow trout, donaldson trout (Oncorhynchus mykiss) = 19000 mg/l, 96 hours

### 12.2 Persistence and degradability

Not relevant for inorganic substances.

### 12.3 Bioaccumulative potential

Will not bioaccumulate.

### 12.4 Mobility in soil

Low water solubility, expected to sink and migrate into the sediment. Expected to partition to sediment and wastewater solids.

### 12.5 Other adverse effects

The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Reuse where possible. No special precautions are normally required when handling this product.

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

| | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|---|---|---|---|
| **14.1 UN Number** | None allocated. | None allocated. | None allocated. |
| **14.2 Proper Shipping Name** | None allocated. | None allocated. | None allocated. |
| **14.3 Transport hazard class** | None allocated. | None allocated. | None allocated. |
| **14.4 Packing Group** | None allocated. | None allocated. | None allocated. |

### 14.5 Environmental hazards

No information provided.

### 14.6 Special precautions for user

**Hazchem code** None allocated.

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

**Inventory listings** **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

## 16. OTHER INFORMATION

**Additional information**

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

**[ End of SDS ]**

**SDS no.** D197
**Version** 4
**Revision date** 28-Jan-2019
**Supersedes Date:** 28-Oct-2015

# Safety Data Sheet
## AccuSET D197

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** AccuSET D197
**Product code** D197

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Silicic acid, sodium salt

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Silicic acid, sodium salt | 215-687-4 | 1344-09-8 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Store away from incompatibles, Metals Aluminum Copper alloys Copper Zinc

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Silicic acid, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Silicic acid, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Silicic acid, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Silicic acid, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Silicic acid, sodium salt | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**

Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness > 0.4 mm |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 11.44 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.13 | @20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |

| | |
|---|---|
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Contact with metals may evolve flammable hydrogen gas.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid excessive heat for prolonged periods of time.

**10.5 Incompatible materials**

Metals. Aluminum. Copper. Copper alloys. Zinc.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Silicic acid, sodium salt | = 1960 mg/kg ( Rat ) | > 4640 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Silicic acid, sodium salt | = 3185 mg/L LC50 Brachydanio rerio 96 h 301 - 478 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 216 mg/L EC50 Daphnia magna 96 h |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |

| | |
|---|---|
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Silicic acid, sodium salt
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 28-Oct-2015 |
| **Revision date** | 28-Jan-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D047
**Version** 3
**Revision date** 03-Mar-2021
**Supersedes Date:** 21-Feb-2016

# Safety Data Sheet
## Antifoam Agent D47

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Antifoam Agent D47
**Product code** D047

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Antifoam in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Avoid contact with: Strong acids Strong bases Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Repeated or prolonged contact Use protective gloves made of: Butyl Gloves-Neoprene, Nitrile Unless Specified Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, |

respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No data available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -35 °C / -31 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | 229 °C / 444.2 °F | ASTM D-93 |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1 | |
| **Bulk density** | No information available | |
| **Relative density** | 1 | @ 21.1°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 414 - 496 cst | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | <0°C/32°F |
| **Molecular weight** | No information available |

| | |
|---|---|
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid excessive heat for prolonged periods of time.

### 10.5 Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Readily biodegradable.

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

### 12.4 Mobility

**Mobility**
The product is insoluble and floats on water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 21-Feb-2016 |
| **Revision date** | 03-Mar-2021 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D175A
**Version** 4
**Revision date** 29-Apr-2020
**Supersedes Date:** 19-Jun-2015

# Safety Data Sheet
## Antifoam Agent D175A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Antifoam Agent D175A
**Product code** D175A

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Non-crystalline silica

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Non-crystalline silica | Listed | Proprietary | 1 - 5 |

**Comments**
No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Extinguish with carbon dioxide, dry chemical, foam or waterspray.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Solutions extremely slippery when spilled.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep at a temperature not exceeding 25 °C Store away from incompatibles, Strong oxidizing agents UV or Ionising Radiation. Steel

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Non-crystalline silica | Not determined | 2mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Non-crystalline silica | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Non-crystalline silica | 1 mg/m³ MAC<br>2 mg/m³ MAC | 6.0 mg/m³ TWA | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Non-crystalline silica | Not determined | Not determined | 3 mg/m³ STEL<br>6 mg/m³ STEL<br>1 mg/m³ TWA<br>2 mg/m³ TWA<br>Fibrogenic substance also vitreous, in the form of disintegration aerosol 1177<br>Fibrogenic substance in the form of condensation aerosol, containing >=10% Silicon dioxide 1175, 1176 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Non-crystalline silica | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Neoprene Nitrile Butyl Rubber<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapor/particulate Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Slight |
| **Color** | Milky white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | ~ 5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | ~ 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2.3 kPa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | ~ 1 | @ 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | ~ 100 mPa s | @ 25 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition.

**10.5 Incompatible materials**

Strong oxidizing agents. UV or Ionising Radiation. Steel.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Non-crystalline silica | = 7900 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 2.2 mg/L ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Inhalation. Ingestion. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae. See component information below.

**Toxicity to fish**
This product is not considered toxic to fish. See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates. See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | **aquatic invertebrates** |
| Non-crystalline silica | = 5000 mg/L LC50 Brachydanio rerio 96 h | = 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 7600 mg/L EC50 Ceriodaphnia dubia 48 h |

### 12.2 Persistence and degradability

The product is not expected to be biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Non-crystalline silica | No information available |

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Non-crystalline silica | Not likely to bioaccumulate |

### 12.4 Mobility

**Mobility**
Dispersible in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required

**Group number** Not required

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 19-Jun-2015 |
| **Revision date** | 29-Apr-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 8, 11, 12, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D206
**Version** 4
**Revision date** 08-May-2018
**Supersedes Date:** 15-Aug-2014

# Safety Data Sheet
## Antifoaming Agent D206

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Antifoaming Agent D206
**Product code** D206

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Defoamer

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry chemical, $CO_2$, water spray or regular foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing. Do not eat, drink or smoke when using this product.

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing Store below 86F (30C). Incompatible with oxidizing agents. Incompatible with materials which react with water. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. Coated (epoxy phenolic) steel drum or high density polyethylene (HDPE) can Stainless steel Plastic container |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes It is good practice to wear goggles when handling any chemical Tightly fitting safety goggles |
| **Hand protection** | Wear chemical resistant gloves such as nitrile or neoprene.<br>Break through time >480 minutes<br>Glove thickness 0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) |
| **Skin and body protection** | Wear appropriate personal protective clothing to prevent skin contact. Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing |

before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | None |
| **Color** | Milky white. |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7-8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | ~ 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2.3 kPa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.0 | @ 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | 0.97-1.01 kg/cm3 | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 500-1100 mPa s (@ 20 °C) | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | 2-4°C |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from freezing. Store below 86F (30C).

### 10.5 Incompatible materials

Strong oxidizing agents. Incompatible with materials which react with water.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Product information** | Product does not present an acute toxicity hazard based on known or supplied information. |
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | None known. |
| **Routes of entry** | No route of entry noted. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | No hazard from product as supplied. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Unknown aquatic toxicity**

### 12.2 Persistence and degradability

The product contains substances which are not expected to be biodegradable.

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 15-Aug-2014 |
| **Revision date** | 08-May-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 1, 7, 8, 9, 15, 16. No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

**SDS no.** D153
**Version** 3
**Revision date** 28-Mar-2018
**Supersedes Date:** 30-Jul-2015

# Safety Data Sheet
## Anti-Settling Agent D153

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Anti-Settling Agent D153
**Product code** D153

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Quartz, Crystalline silica

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Quartz, Crystalline silica | 238-878-4 | 14808-60-7 | 60 - 100 |

**Comments**
IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn.

Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Carbon oxides (COx), React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Material becomes slippery when wet. Use caution if wet. Avoid dust formation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Product is slippery if wet. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes extremely slippery when wet. See Section 8.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture Avoid heat, flames and other sources of ignition. Avoid contact with: Hydrofluoric acid (HF) Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Quartz, Crystalline silica | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Quartz, Crystalline silica | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Quartz, Crystalline silica | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene gloves Nitrile
Break through time >0.4 minutes
Glove thickness >480 mm
Frequent change is advisable

**Respiratory protection** — In case of inadequate ventilation wear respiratory protection Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear appropriate personal protective clothing to prevent skin contact. Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6-9 | @20g/l |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.65 | |
| **Bulk density** | 1100 - 1600 kg/m$^3$ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4). Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Protect from moisture. Avoid dust formation. Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition.

**10.5 Incompatible materials**

Hydrofluoric acid (HF). Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause respiratory irritation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Dust contact with the eyes can lead to mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Quartz, Crystalline silica | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Quartz, Crystalline silica | No information available | No information available | No information available |

## 12.2 Persistence and degradability

No product level data available.

## 12.3 Bioaccumulative potential

No product level data available.

## 12.4 Mobility

**Mobility**
The product is insoluble and sinks in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 30-Jul-2015 |
| **Revision date** | 28-Mar-2018 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate**

**agreement between the parties.**

**SDS no.** PID2443
**Version** 6
**Revision date** 26-Oct-2018
**Supersedes Date:** 02-Feb-2016

# Safety Data Sheet
## ASPHASOL* SUPREME

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ASPHASOL* SUPREME
**Product code** PID2443
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor. / Fluid loss reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <3 |

### 3.2 Mixtures

Not applicable

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, |

| | | | 1124 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Mild Sulfur |
| **Color** | Gray - Black |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 7 - 10 | @ 2% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | Not applicable | |

| | |
|---|---|
| **Flammability (solid, gas)** | Not applicable |
| **Flammability Limit in Air** | |
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | 1.40 - 1.65 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Partly soluble |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | 190 °C / 374 °F |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

This product contains an ingredient that is classified, according to European regulations, as "harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment".
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**

This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Partly soluble. See component information below.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Feb-2016 |
| **Revision date** | 26-Oct-2018 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS**

**information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2049
**Version** 13
**Revision date** 17-Jan-2020
**Supersedes Date:** 05-Mar-2019

# Safety Data Sheet
## BARITE (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** BARITE (All Grades)
**Product code** PID2049

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Weighting agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Barite

Crystalline silica (impurity)

**2.3 Other hazards**

Thermal decomposition can lead to release of irritating gases and vapors
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Barite | 236-664-5 | 13462-86-7 | 60 - 100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 5 - <10 |

**3.2 Mixtures**

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL |

| | | | |
|---|---|---|---|
| | | | 1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene PVC Nitrile Frequent change is advisable

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Tan - Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 1580 °C / 2876 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |

| | | |
|---|---|---|
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 4.10 - 4.25 | @ 20 °C |
| **Bulk density** | 1920 - 2400 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Avoid wet and humid conditions.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Respirable quartz <0.3% . Report number: N0600517.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Barite | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Barite | Inorganic compound |
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Barite | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Barite | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Barite | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

CAS Number 7727-43-7 can be used to identify the substance mentioned in Section 3 for the International Inventories.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 05-Mar-2019 |
| **Revision date** | 17-Jan-2020 |
| **Version** | 13 |
| **This SDS has been revised in the following section(s)** | 1, 3, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com

Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Follow general hygiene considerations recognized as common good workplace practices Do not handle until all safety precautions have been read and understood

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D031
**Version** 3
**Revision date** 29-Aug-2018
**Supersedes Date:** 29-Jul-2015

# Safety Data Sheet
## BARITE 4,1 D31

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** BARITE 4,1 D31
**Product code** D031

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Weighting agent. Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <5 |

**3.2 Mixtures**

Not applicable

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid generating or breathing dust. Take up mechanically and collect in suitable container for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Do not breathe dust. Avoid contact with skin and eyes.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid extreme temperatures Store away from incompatibles, Hydrofluoric acid (HF) Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |

| | | | |
|---|---|---|---|
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Rubber Nitrile Neoprene gloves Frequent change is advisable |
| **Respiratory protection** | Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Light tan - Light gray |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |

| | |
|---|---|
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | Not applicable |
| **Vapor density** | Not applicable |
| **Specific gravity** | 4.1 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid extreme temperatures. Avoid dust formation.

**10.5 Incompatible materials**

Hydrofluoric acid (HF). Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 29-Jul-2015 |
| **Revision date** | 29-Aug-2018 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D020
**Version** 6
**Revision date** 11-Oct-2018
**Supersedes Date:** 19-Oct-2015

# Safety Data Sheet
## Bentonite Extender D20

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Bentonite Extender D20
**Product code** D020

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

**3.2 Mixtures**

Not applicable

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 1-5 |

**Comments**
Naturally occuring mineral.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Cream - Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9-10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | > 450 °C / 842 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |

| | | |
|---|---|---|
| **Specific gravity** | 2.3 - 2.6 | 20 °C |
| **Bulk density** | 750 – 950 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 500 °C / 932°F | |
| **Kinematic viscosity** | Not applicable | |
| **Dynamic viscosity** | . Not applicable | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid wet and humid conditions. Avoid dust formation.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Product information** | This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. |

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other |
|---|---|---|---|

| | | | aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 19-Oct-2015 |
| **Revision date** | 11-Oct-2018 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** PID15482
**Version** 5
**Revision date** 28-Feb-2018
**Supersedes Date:** 04-Mar-2015

# Safety Data Sheet
## BENTONITE SPUD SYSTEM

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** BENTONITE SPUD SYSTEM
**Product code** PID15482

**Synonyms** BENTONITE SPUD SYSTEM (PUMP AND DUMP FORMULATION)

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

### 2.3 Other hazards

Thermal decomposition can lead to release of irritating gases and vapors
Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <2 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, |

| | | | 1124 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

#### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Mild |
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |

| | | |
|---|---|---|
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.67 - 2.04 g/cm³ | @ 20°C. |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

**Inhalation** Vapors may irritate throat and respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 04-Mar-2015 |
| **Revision date** | 28-Feb-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID211
**Version** 10
**Revision date** 09-Feb-2019
**Supersedes Date:** 07-Jul-2018

# Safety Data Sheet
BENTONITE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** BENTONITE
**Product code** PID211

**Synonyms** API BENTONITE, OCMA BENTONITE, WYOMING BENTONITE

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 1-5 |

### 3.2 Mixtures

Not applicable

**Comments**
Naturally occuring mineral.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, |

| | | | 1124 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts<br>Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders<br>Use protective gloves made of: Neoprene Nitrile<br>Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Cream - Gray |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 9-10 | |
| **Melting / freezing point** | > 450 °C / 842 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | Not applicable | |

| | | |
|---|---|---|
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.3 - 2.6 | 20 °C |
| **Bulk density** | 750 – 950 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Negligible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 500 °C / 932°F | |
| **Kinematic viscosity** | Not applicable | |
| **Dynamic viscosity** | . Not applicable | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid wet and humid conditions. Avoid dust formation.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 07-Jul-2018 |
| **Revision date** | 09-Feb-2019 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | 2, 8, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no**

**responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID11786
**Version** 7
**Revision date** 31-Jan-2018
**Supersedes Date:** 17-Dec-2015

# Safety Data Sheet
## CAL-Acid 50%

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CAL-Acid 50%
**Product code** PID11786

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Scale dissolver

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1B |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage

**Contains**
Formic acid

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Formic acid | 200-579-1 | 64-18-6 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Keep at rest. Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet, Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** •2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Avoid contact with: High temperatures. Oxidizing agents Bases Acids Amines Powdered metal Metals

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Formic acid | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA | 10ppmSTEL<br>19mg/m³STEL<br>5ppmTWA<br>9.4mg/m³TWA | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Formic acid | 5 ppm TWA<br>9 mg/m³ TWA | 5 ppm TWA<br>Skin notation<br>10 ppm STEL<br>19 mg/m³ STEL | 5 ppm OEL<br>9.4 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Formic acid | 1 mg/m³ MAC | 9.0 mg/m³ TWA<br>5.0 ppm TWA<br>10.0 ppm STEL | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Formic acid | 5 ppm TWA<br>9.4 mg/m³ TWA | 5 ppm TWA<br>9 mg/m³ TWA | Skin notation<br>1 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Formic acid | 5 ppm TWA | 9 mg/m³ TWA<br>18 mg/m³ STEL | 5 ppm TWA<br>9 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Eye protection must conform to standard EN 166 Chemical splash goggles and/or face shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Butyl rubber
Break through time >480 minutes
Glove thickness 0.7 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Type A/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Strong |
| **Color** | Light yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 2 - 3 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | < 10 cPs | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.01 - 1.04 g/ml @ 25°C |

**Comments**

The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive. Contact with metals may evolve flammable hydrogen gas.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
May release hydrogen gas (explosive) on contact with metals.

### 10.4 Conditions to avoid

Keep away from direct sunlight. High temperatures.

### 10.5 Incompatible materials

Oxidizing agents. Bases. Acids. Amines. Powdered metal. Metals.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing.

**Eye contact** Causes burns. May cause irreversible damage to eyes.

**Skin contact** Causes burns.

**Ingestion** Causes burns. Can burn mouth, throat, and stomach. Corrosive to the respiratory tract.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Formic acid | = 1100 mg/kg ( Rat ) | No data available | = 15 g/m³ ( Rat ) 15 min |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Ingestion. Inhalation. |
| **Routes of entry** | Skin contact. Eye contact. Ingestion. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Formic acid | = 175 mg/L LC50 Lepomis macrochirus 24 h | = 26.9 mg/L EC50 Desmodesmus subspicatus 72 h = 25 mg/L EC50 Desmodesmus subspicatus 96 h | 138 - 165.6 mg/L EC50 Daphnia magna 48 h = 120 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of as hazardous waste in compliance with local and national regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN3412 |
| **UN No. (IMDG/ANTAQ)** | UN3412 |
| **UN No. (ICAO/ANAC)** | UN3412 |

**14.2. UN proper shipping name**
FORMIC ACID,

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | II |
| **IMDG/ANTAQ Packing group** | II |
| **ICAO/ANAC Packing group** | II |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | •2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | •2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Formic acid
Schedule 5

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002491 - Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2017 |
| **Group number** | 8.2B |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 17-Dec-2015 |
| **Revision date** | 31-Jan-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** PID12163
**Version** 7
**Revision date** 05-Jan-2018
**Supersedes Date:** 25-Jul-2014

# Safety Data Sheet
## CAL-Acid

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CAL-Acid
**Product code** PID12163

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Scale dissolver

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1B |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P391 - Collect spillage

**Contains**
Formic acid

Citric acid monohydrate

Amines, tallow alkyl, ethoxylated

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Formic acid | 200-579-1 | 64-18-6 | 10-30 |
| Citric acid monohydrate | 611-842-9 | 5949-29-1 | 1-<3 |
| Amines, tallow alkyl, ethoxylated | 500-153-8 | 61791-26-2 | 0.1-<1 |

**Comments**

The product contains other ingredients which do not contribute to the overall classification.
Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Keep at rest. Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet, Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**

Contact with metals may evolve flammable hydrogen gas.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Avoid contact with: High temperatures. Oxidizing agents Bases Acids Amines Powdered metal Metals

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Formic acid | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA | 10ppmSTEL<br>19mg/m³STEL<br>5ppmTWA<br>9.4mg/m³TWA | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA |
| Citric acid monohydrate | Not determined | Not determined | Not determined |
| Amines, tallow alkyl, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Formic acid | 5 ppm TWA<br>9 mg/m³ TWA | 5 ppm TWA<br>Skin notation<br>10 ppm STEL<br>19 mg/m³ STEL | 5 ppm OEL<br>9.4 mg/m³ OEL |
| Citric acid monohydrate | Not determined | Not determined | Not determined |
| Amines, tallow alkyl, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Formic acid | 1 mg/m³ MAC | 9.0 mg/m³ TWA<br>5.0 ppm TWA<br>10.0 ppm STEL | 10 ppm STEL<br>19 mg/m³ STEL<br>5 ppm TWA<br>9.4 mg/m³ TWA |
| Citric acid monohydrate | Not determined | Not determined | Not determined |
| Amines, tallow alkyl, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Formic acid | 5 ppm TWA<br>9.4 mg/m³ TWA | 5 ppm TWA<br>9 mg/m³ TWA | Skin notation<br>1 mg/m³ MAC<br>Skin |
| Citric acid monohydrate | Not determined | Not determined | Not determined |
| Amines, tallow alkyl, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Formic acid | 5 ppm TWA | 9 mg/m³ TWA<br>18 mg/m³ STEL | 5 ppm TWA<br>9 mg/m³ TWA |
| Citric acid monohydrate | Not determined | Not determined | Not determined |
| Amines, tallow alkyl, ethoxylated | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Chemical splash goggles and/or face shield |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Butyl rubber<br>Break through time >480 minutes<br>Glove thickness 0.7 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Type A/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Strong |
| **Color** | Light amber |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 2.0 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |

| | | |
|---|---|---|
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | < 2 cPs | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | 0°C / 32°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.06 - 1.08 g/ml @ 20°C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Corrosive. Contact with metals may evolve flammable hydrogen gas.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
May release hydrogen gas (explosive) on contact with metals.

**10.4 Conditions to avoid**

Keep away from direct sunlight. High temperatures.

**10.5 Incompatible materials**

Oxidizing agents. Bases. Acids. Amines. Powdered metal. Metals.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing. |
| **Eye contact** | Causes burns. May cause irreversible damage to eyes. |

**Skin contact** Causes burns.

**Ingestion** Causes burns. Can burn mouth, throat, and stomach. Corrosive to the respiratory tract.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Formic acid | = 1100 mg/kg ( Rat ) | No data available | = 15 g/m³ ( Rat ) 15 min |
| Citric acid monohydrate | No data available | No data available | No data available |
| Amines, tallow alkyl, ethoxylated | > 300 - 2000 mg/kg(Rat) | > 10 g/kg ( Rat ) | 0.473 mg/l (Rat) dust/mist OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Ingestion. Inhalation.

**Routes of entry** Skin contact. Eye contact. Ingestion. Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other |
|---|---|---|---|

| | | | aquatic invertebrates |
|---|---|---|---|
| Formic acid | = 175 mg/L LC50 Lepomis macrochirus 24 h | = 26.9 mg/L EC50 Desmodesmus subspicatus 72 h = 25 mg/L EC50 Desmodesmus subspicatus 96 h | 138 - 165.6 mg/L EC50 Daphnia magna 48 h = 120 mg/L EC50 Daphnia magna 48 h |
| Citric acid monohydrate | = 1516 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 120 mg/L EC50 Daphnia magna 72 h |
| Amines, tallow alkyl, ethoxylated | 1 - 10 mg/L LC50(Oncorhynchus mykiss) 96h | 1- 10 mg/L EC50(Phaeodactylum tricornutum - Algae) 72h | 1 - 10 mg/L EC50(Daphnia magna, Water flea) 48h |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of as hazardous waste in compliance with local and national regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN3412 |
| **UN No. (IMDG/ANTAQ)** | UN3412 |
| **UN No. (ICAO/ANAC)** | UN3412 |

**14.2. UN proper shipping name**
FORMIC ACID,

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | II |
| **IMDG/ANTAQ Packing group** | II |
| **ICAO/ANAC Packing group** | II |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | •2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Formic acid
Schedule 5
Amines, tallow alkyl, ethoxylated
Schedule 5

**New Zealand Hazard Classification** Classified

| | |
|---|---|
| **HSNO approval no.** | HSR002491 - Additives, Process Chemicals and Raw Materials (Corrosive) Group Standard 2017 |
| **Group number** | 8.2B |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 25-Jul-2014 |
| **Revision date** | 05-Jan-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2468
**Version** 9
**Revision date** 25-Jan-2019
**Supersedes Date:** 29-Dec-2015

# Safety Data Sheet
## CALCIUM BROMIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CALCIUM BROMIDE BRINE
**Product code** PID2468

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Clear-brine workover and completion fluid.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Calcium bromide

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium bromide | 232-164-6 | 7789-41-5 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Hydrogen bromide, Bromine.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Avoid contact with: Strong oxidizing agents Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium bromide | Not determined | Not determined | Not determined |

| Chemical Name | Kazakhstan | Kuwait | New Zealand |
|---|---|---|---|
| Calcium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium bromide | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -7 °C / < 19.4 °F | |
| **Boiling point/range** | 119 °C / 246.2 °F | 760 mm Hg |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2333 Pa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.40 - 1.75 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | >700°C / > 1292°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Not applicable
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid excessive heat for prolonged periods of time.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged skin contact may cause skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium bromide | = 4100 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium bromide | No information available | No information available | No information available |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium bromide | Inorganic compound |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium bromide | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium bromide | Easily soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium bromide | No information available |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z. Proper Shipping Name: Drilling Brines (containing Calcium Bromide)

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Calcium bromide
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 29-Dec-2015 |
| **Revision date** | 25-Jan-2019 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID218
**Version** 9
**Revision date** 08-Feb-2021
**Supersedes Date:** 09-Jan-2017

# Safety Data Sheet
## CALCIUM CHLORIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CALCIUM CHLORIDE BRINE
**Product code** PID218

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

_

**Contains**
Calcium chloride

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium chloride | 233-140-8 | 10043-52-4 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

| | |
|---|---|
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Chlorine, chlorine oxides, hydrogen chloride.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

**Advice for emergency responders**
Evacuate personnel to safe areas. Use non-slip safety shoes in areas where spills or leaks can occur. Wear respiratory protection. Keep people away from and upwind of spill/leak.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Strong reducing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium chloride | Not determined | Not determined | 2 mg/m³ MAC (aerosol) |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium chloride | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile rubber
Break through time >480 minutes
Glove thickness 0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type B/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6.5 - 7.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -14 °C / 7 °F | |
| **Boiling point/range** | > 100 °C / >212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 9 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.01 - 1.41 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong reducing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium chloride | = 1000 mg/kg ( Rat ) | > 5000 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium chloride | = 10650 mg/L LC50 Lepomis macrochirus 96 h | No information available | 2,400 mg/L EC50 (Daphnia magna) = 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium chloride | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium chloride | Inorganic compound |

### 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium chloride | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium chloride | After release, disperses through ground water |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Proper Shipping Name : Calcium Chloride Solution (less than 35%) Ship Type:- 3. Pollution Category:- Z.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | Calcium Chloride - HSR003389<br>Calcium chloride, >25% in a non hazardous diluent - HSR006565 |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) with amendments.MARPOL 73/78; Marine Environmental Protection Committee (MEPC) Circulars.**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 09-Jan-2017 |
| **Revision date** | 08-Feb-2021 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | 14. Transport information 15. Regulatory Information There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | J |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** M002
**Version** 5
**Revision date** 08-Oct-2018
**Supersedes Date:** 25-Apr-2017

# Safety Data Sheet
## Caustic Soda M2

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Caustic Soda M2
**Product code** M002

**CAS No** 1310-73-2
**EC No** 215-185-5

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1A |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P406 - Store in corrosion resistant container with a resistant inner liner

**Supplementary precautionary statements**
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Sodium hydroxide

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium hydroxide | 215-185-5 | 1310-73-2 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Immediate medical attention is required.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas. The product reacts with water and will generate heat.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapors Sodium oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid dust formation. Do not breathe dust. Never add water directly to this product - may cause vigorous reaction/boiling. Always dilute by carefully pouring the product into the water.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Store in original container. Protect from moisture High temperatures. Avoid contact with: Acids Water Oxidizing agents Metals Halogenated hydrocarbons Ammonium salts |
| **Storage class** | Corrosive storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium hydroxide | Not determined | 2 mg/m³ Peak | 2 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ TWA | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium hydroxide | 2 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Chemical splash goggles and/or face shield

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders
Impervious gloves made of: Nitrile Rubber
Break through time >480 minutes
Glove thickness 0.35-0.4 mm
PVC Butyl rubber Break through time >480 minutes
Glove thickness >0.5 mm
Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type B/P2 Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more

information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Flakes |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | >14 | 10 g/ 100ml |
| **Melting / freezing point** | 323 °C / 613.4 °F | |
| **Boiling point/range** | 1388 °C / 2530.4 °F | |
| **Flash point** | | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 0.1 kPa | @ 739 °C |
| **Vapor density** | >1 (air = 1) | |
| **Specific gravity** | 2.1 | @ 20 °C |
| **Bulk density** | 1.1 - 2.13 g/cm³ | |
| **Relative density** | 2.1 | @ 20°C. |
| **Water solubility** | Soluble in water 42g/ 100ml | |
| **Solubility in other solvents** | Ethanol Methanol | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 0.997 - 2.228 mPa.s | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Corrosive to Metals. Contact with metals may evolve flammable hydrogen gas. Reacts violently with water.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. High temperatures.

### 10.5 Incompatible materials

Acids. Metals. Water. Oxidizing agents. Halogenated hydrocarbons. Ammonium salts.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns. Inhaled corrosive substances can lead to a toxic edema of the lungs.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes severe skin burns.

**Ingestion** Ingestion causes burns of the upper digestive and respiratory tracts.

**Unknown acute toxicity** Not applicable.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | No data available | 1350 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Eye contact. Inhalation. Ingestion.

**Routes of entry** Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium hydroxide | = 45.4 mg/L LC50 Oncorhynchus mykiss 96 h | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Sodium hydroxide | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Sodium hydroxide | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| Sodium hydroxide | Soluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Sodium hydroxide | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN1823 |
| **UN No. (IMDG/ANTAQ)** | UN1823 |
| **UN No. (ICAO/ANAC)** | UN1823 |

### 14.2. UN proper shipping name

SODIUM HYDROXIDE, SOLID,

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | II |
| **IMDG/ANTAQ Packing group** | II |
| **ICAO/ANAC Packing group** | II |


### 14.5 Environmental hazard

No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2W |
| **Tunnel restriction code** | (E) |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium hydroxide
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 25-Apr-2017 |
| **Revision date** | 08-Oct-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | 1, 8, 15, 16<br>No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 0 |
| Physical hazard | 1 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D901
**Version** 6
**Revision date** 08-Jun-2021
**Supersedes Date:** 13-Apr-2016

# Safety Data Sheet
## Cement Class A D901

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Cement Class A D901
**Product code** D901

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1B |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary statements**
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Portland cement

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Portland cement | 266-043-4 | 65997-15-1 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with the skin and the eyes. Avoid dust formation. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Persons susceptible to allergic reactions should not handle this product. May produce an allergic reaction.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Oxidizing agents Strong acids Aluminum Hydrofluoric acid (HF) |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

## 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Portland cement | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Portland cement | 10 mg/m³ TWA | 10 mg/m³ TWA | 4 mg/m³ OEL<br>1 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Portland cement | Not determined | 10.0 mg/m³ TWA<br>5.0 mg/m³ TWA | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Portland cement | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Portland cement | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: PVC disposable gloves Rubber gloves Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Gray or White |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 11 - 13 | @10% sol |
| **Melting / freezing point** | > 1250 °C / 2282 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 0.9 - 1.5 g/cm³ | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | 2.75 - 3.20 | |
| **Explosive properties** | Not applicable | |
| **Oxidizing properties** | Not applicable | |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Oxidizing agents. Hydrofluoric acid (HF). Strong acids. Aluminium.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** Ingestion may cause irritation to mucous membranes.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Portland cement | No data available | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Inhalation. Eye contact.

**Routes of entry** Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Category 3

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Portland cement | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Portland cement
Schedule 4
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

**USA (TSCA)** Complies

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 13-Apr-2016 |
| **Revision date** | 08-Jun-2021 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D907
**Version** 5
**Revision date** 01-Aug-2018
**Supersedes Date:** 05-Mar-2014

# Safety Data Sheet
## Cement Class G D907

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Cement Class G D907
**Product code** D907
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Sub-Category 1B |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P362 - Take off contaminated clothing and wash before reuse
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Portland Cement Clinker

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Portland Cement Clinker | 266-043-4 | 65997-15-1 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Avoid contact with the skin and the eyes.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors/dust. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Store away from incompatibles, Powdered aluminum Acids Oxidizing agents Hydrofluoric acid (HF) |

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | 4 mg/m³ OEL<br>1 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Portland Cement Clinker | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Portland Cement Clinker | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Portland Cement Clinker | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: PVC disposable gloves Rubber gloves Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Effective dust mask. Type P2/P3 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Gray or White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 11 - 13 | @10% sol |
| **Melting / freezing point** | > 1250 °C / 2282 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | ~ 3 | |
| **Bulk density** | 0.9 - 1.5 g/cm³ | |
| **Relative density** | 2.75 - 3.20 | |
| **Water solubility** | 0.1-1.5 g/L @ 20 °C | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | Not applicable |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Acids. Powdered aluminum. Strong oxidizing agents. Hydrofluoric acid (HF).

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** Ingestion may cause irritation to mucous membranes.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Portland Cement Clinker | No data available | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Inhalation. Eye contact.

**Routes of entry** Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Category 3

**Specific target organ toxicity -** Not classified.

**Repeated exposure**

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Portland Cement Clinker | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Portland Cement Clinker | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Portland Cement Clinker | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

None

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Portland Cement Clinker
Schedule 4
Schedule 6
Schedule 5

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | 6.5B, 6.3A, 8.3A |
| **Group number** | HSR002544 |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 05-Mar-2014 |
| **Revision date** | 01-Aug-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 * |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D080
**Version** 4
**Revision date** 10-Feb-2021
**Supersedes Date:** 22-Jan-2016

# Safety Data Sheet
## Cement Liquid Dispersant D80

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Cement Liquid Dispersant D80
**Product code** D080

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 2 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
H411 - Toxic to aquatic life with long lasting effects

**Precautionary statements**
P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

_

**Contains**
Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.
Classified as Hazardous according to the criteria of NOHSC.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Polymer | 9008-63-3 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 3Z

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13). After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Do not freeze Store above 0°C Avoid contact with: Oxidizing agents Acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Not determined | Not determined | Not determined |

| Chemical Name | Kazakhstan | Kuwait | New Zealand |
|---|---|---|---|
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation, especially in confined areas

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Wear chemical resistant gloves such as nitrile or neoprene.
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

**Physical state** Liquid
**Appearance** Opaque
**Odor** Pungent

| | |
|---|---|
| **Color** | Dark brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6 - 8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | - 2 °C/ 28 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | > 1 (air = 1) | |
| **Specific gravity** | 1.2 g/cm$^3$ | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 60 mPa s | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Do not freeze. Store above 0°C.

### 10.5 Incompatible materials

Oxidizing agents. Acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

Toxic to aquatic life with long lasting effects

**Toxicity to algae**
EC50 1.46 mg/l Skeletonema Costatum 48 h.

**Toxicity to fish**
Not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
LC50 > 100 mg/l Acartia tonsa 48 h.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Naphthalenesulfonic acid, sodium salt, polymer with formaldehyde | No information available | No information available | No information available |

## 12.2 Persistence and degradability

Product is not biodegradable.

## 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**

**UN/ID No. (ADR/RID/ADN/ADG)** UN3082
**UN No. (IMDG/ANTAQ)** UN3082
**UN No. (ICAO/ANAC)** UN3082

**14.2. UN proper shipping name**
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Sodium polynaphthalene sulfonate)

**14.3 Hazard class(es)**
**ADR/RID/ADN/ADG Hazard class** 9
**IMDG/ANTAQ Hazard class** 9
**ICAO/ANAC Hazard class/division** 9

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** III
**IMDG/ANTAQ Packing group** III
**ICAO/ANAC Packing group** III


**14.5 Environmental hazard**
Yes

**14.6 Special precautions**
**Hazard identification no (ADR)** 90
**EmS (IMDG)** F-A, S-F
**Emergency Action Code (EAC)** 3Z
**Tunnel restriction code** (-)
**Hazchem code ADG** 3Z

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Construction Products (Subsidiary Hazard) Group Standard 2020 |
| **HSNO approval no.** | HSR002544 |
| **Group number** | 9.1B |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 22-Jan-2016 |
| **Revision date** | 10-Feb-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D110
**Version** 4
**Revision date** 10-Sep-2019
**Supersedes Date:** 06-Jun-2018

# Safety Data Sheet
## Cement Retarder D110

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Cement Retarder D110
**Product code** D110

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium chloride (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium chloride (impurity) | 231-598-3 | 7647-14-5 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Do not freeze Store above 0°C Store away from incompatibles, Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium chloride (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium chloride (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium chloride (impurity) | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium chloride (impurity) | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium chloride (impurity) | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Rubber<br>Break through time >480 minutes<br>Glove thickness 0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 In case of insufficient ventilation, wear suitable respiratory equipment |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Opaque |
| **Odor** | Sweet |
| **Color** | Brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 6 - 9 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -4 °C / 24.8 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.13 | |
| **Bulk density** | No information available | |
| **Relative density** | 1.128 - 1.144 | @ 25°C. |
| **Water solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | >242°C / >467.6 °F | |

| | | |
|---|---|---|
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 1.5cst | @ 40 °C |
| **log Pow** | Does not bioaccumulate | |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Do not freeze. Store above 0°C.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium chloride (impurity) | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium chloride (impurity) | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Does not comply |

| | |
|---|---|
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 06-Jun-2018 |
| **Revision date** | 10-Sep-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D178
**Version** 4
**Revision date** 03-Oct-2019
**Supersedes Date:** 26-Jun-2019

# Safety Data Sheet
## CemPLUS Geo D178

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CemPLUS Geo D178
**Product code** D178

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Carcinogenicity | Category 1A |
| Specific target organ toxicity - Repeated exposure | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H350 - May cause cancer if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary statements**
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P201 - Obtain special instructions before use
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product

**Contains**
Quartz, Crystalline silica

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Quartz, Crystalline silica | 238-878-4 | 14808-60-7 | 60-100 |
| Respirable Crystalline Silica (Quartz) | 238-878-4 | 14808-60-7 | >10 |

### 3.2 Mixtures

Not applicable

**Comments**
IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid breathing dust; if exposed to high dust concentration, leave area immediately.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. For personal protection see section 8.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store away from incompatibles, React with hydrofluoric acid (HF) forming toxic gas (SiF4) Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| Quartz, Crystalline silica | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Quartz, Crystalline silica | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Quartz, Crystalline silica | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Provide appropriate exhaust ventilation at places where dust is formed Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Rubber Frequent change is advisable

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Tan or White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |

| | | |
|---|---|---|
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 1100 -1600 kg/m$^3$ | |
| **Relative density** | 2.5-2.7 | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation.

**10.5 Incompatible materials**

Hydrofluoric acid (HF). Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause respiratory irritation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Quartz, Crystalline silica | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 1.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Quartz, Crystalline silica | No information available | No information available | No information available |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Quartz, Crystalline silica | Inorganic compound |

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Quartz, Crystalline silica | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Quartz, Crystalline silica | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Quartz, Crystalline silica | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not applicable

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR003125

| | |
|---|---|
| **Group number** | 6.7A, 6.9A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 26-Jun-2019 |
| **Revision date** | 03-Oct-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 9. Physical and chemical properties No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |

| | |
|---|---|
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** U042
**Version** 6
**Revision date** 10-Aug-2018
**Supersedes Date:** 28-Jul-2016

# Safety Data Sheet
## Chelating Agent U42

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Chelating Agent U42
**Product code** U042

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Iron control agent in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

| | |
|---|---|
| **Croatia** | 01-23-48-342( for medical information) -Center for Poison |

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P280 - Wear protective gloves
P280 - Wear eye protection/ face protection
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P210 - Keep away from heat. - No smoking
P314 - Get medical advice/attention if you feel unwell
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

**Contains**
Tetrasodium ethylenediaminetetraacetate

Sodium hydroxide

Trisodium nitrilotriacetate (impurity)

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

# 3. Composition/information on Ingredients

## 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Tetrasodium ethylenediaminetetraacetate | 200-573-9 | 64-02-8 | 30 - 60 |
| Sodium hydroxide | 215-185-5 | 1310-73-2 | <=1 |
| Trisodium nitrilotriacetate (impurity) | 225-768-6 | 5064-31-3 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Get immediate medical attention. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray or fog is preferred; if water not available use dry chemical, $CO_2$ or regular foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Heating or fire can release toxic gas Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or

spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store at ambient conditions Store away from incompatibles, Zinc Aluminum Copper Copper alloys Nickel Steel Oxidizing agents

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Tetrasodium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| Sodium hydroxide | Not determined | 2 mg/m³ Peak | 2 mg/m³ Ceiling |
| Trisodium nitrilotriacetate (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Tetrasodium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | Not determined |
| Trisodium nitrilotriacetate (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Tetrasodium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| Sodium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| Trisodium nitrilotriacetate (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Tetrasodium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ TWA | Not determined |
| Trisodium nitrilotriacetate (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Tetrasodium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| Sodium hydroxide | 2 mg/m³ TWA | Not determined | Not determined |
| Trisodium nitrilotriacetate (impurity) | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Chemical splash goggles and/or face shield Eye protection must conform to standard EN 166 |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of:<br>Butyl rubber Break through time >30 minutes<br>Glove thickness 0.7 mm<br>or<br>Nitrile rubber Glove thickness >30 mm<br>Break through time 0.4 minutes<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight Ammoniacal |
| **Color** | Yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 12 | (@1%w/w) |
| **Melting / freezing point** | -31 °C / -24 °F | |
| **Boiling point/range** | 106 °C / 223 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 | 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.31 | @ 25°C. |

| | |
|---|---|
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | 10 cSt @ 20 °C |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Corrosive.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Store at ambient conditions.

**10.5 Incompatible materials**

Zinc. Aluminum. Copper. Copper alloys. Nickel. Steel. Incompatible with oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Harmful by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. May cause damage to organs through prolonged or repeated exposure. |
| **Eye contact** | Causes serious eye damage. May cause irreversible damage to eyes. |

**Skin contact** Causes skin irritation. Prolonged skin contact may cause burns.

**Ingestion** Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Tetrasodium ethylenediaminetetraacetate | = 10,000 mg/kg ( Rat ) | No data available | No data available |
| Sodium hydroxide | No data available | 1350 mg/kg ( Rabbit ) | No data available |
| Trisodium nitrilotriacetate (impurity) | = 1100 mg/kg ( Rat ) | No data available | > 5 mg/L ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Skin contact. Eye contact. Ingestion.

**Routes of entry** Ingestion. Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Tetrasodium ethylenediaminetetraacetate | = 59.8 mg/L LC50 Pimephales promelas 96 h = 41 mg/L LC50 Lepomis macrochirus 96 h | = 1.01 mg/L EC50 Desmodesmus subspicatus 72 h | = 610 mg/L EC50 Daphnia magna 24 h |
| Sodium hydroxide | = 45.4 mg/L LC50 Oncorhynchus mykiss 96 h | No information available | No information available |
| Trisodium nitrilotriacetate (impurity) | = 114 mg/L LC50 Pimephales promelas 96 h 560 - 1000 mg/L LC50 Poecilia reticulata 96 h 72 - 133 mg/L LC50 Oncorhynchus mykiss 96 h 560 - 1000 mg/L LC50 Oryzias latipes 96 h = 470 mg/L LC50 Pimephales promelas 96 h = 252 mg/L LC50 Lepomis macrochirus 96 h 93 - 170 mg/L LC50 Pimephales promelas 96 h 175 - 225 mg/L LC50 Lepomis macrochirus 96 h | 560 - 1000 mg/L EC50 Chlorella vulgaris 96 h | 560 - 1000 mg/L LC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not readily biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Tetrasodium ethylenediaminetetraacetate | Not readily biodegradable |
| Sodium hydroxide | Inorganic compound |
| Trisodium nitrilotriacetate (impurity) | Readily biodegradable |

## 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

| Chemical Name | Bioaccumulation |
|---|---|
| Tetrasodium ethylenediaminetetraacetate | No bioaccumulation potential |
| Sodium hydroxide | No bioaccumulation potential |
| Trisodium nitrilotriacetate (impurity) | Not likely to bioaccumulate |

**log Pow**
<3

## 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

| Chemical Name | Mobility |
|---|---|
| Tetrasodium ethylenediaminetetraacetate | Soluble in water |
| Sodium hydroxide | Easily soluble |
| Trisodium nitrilotriacetate (impurity) | Soluble in water |

**Mobility in soil**
Not expected to adsorb on soil.

| Chemical Name | Mobility in soil |
|---|---|

| | |
|---|---|
| Tetrasodium ethylenediaminetetraacetate | Henry's Law Constant : 1.19E-18 Pa*m3/mol @ 25°C |
| Sodium hydroxide | Not expected to adsorb on soil |
| Trisodium nitrilotriacetate (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN3267
**UN No. (IMDG/ANTAQ)** UN3267
**UN No. (ICAO/ANAC)** UN3267

### 14.2. UN proper shipping name

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (contains sodium hydroxide), tetrasodium ethylenediaminetetra acetic acid),

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** 8
**IMDG/ANTAQ Hazard class** 8
**ICAO/ANAC Hazard class/division** 8

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** III
**IMDG/ANTAQ Packing group** III
**ICAO/ANAC Packing group** III

**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium hydroxide
Schedule 6
Schedule 5
Trisodium nitrilotriacetate (impurity)
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland

| | |
|---|---|
| **Supersedes Date:** | 28-Jul-2016 |
| **Revision date** | 10-Aug-2018 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | The following sections have been revised: 2, 8, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D079
**Version** 3
**Revision date** 08-Oct-2018
**Supersedes Date:** 22-Jan-2015

# Safety Data Sheet
## Chemical Extender D79

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Chemical Extender D79
**Product code** D079

**CAS No** 6834-92-0
**EC No** 229-912-9

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 B |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage
H335 - May cause respiratory irritation
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P310 - Immediately call a POISON CENTER or doctor/physician
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**Contains**
Disodium metasilicate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Disodium metasilicate | 229-912-9 | 6834-92-0 | 60 - 100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid dust formation. Do not breathe dust.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Protect from moisture Store away from incompatibles, See Section 10 |
| **Storage class** | Corrosive storage. |
| **Packaging materials** | Use specially constructed containers only. |

**Packaging materials to be avoided** Aluminium

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Disodium metasilicate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Disodium metasilicate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Disodium metasilicate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Disodium metasilicate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Disodium metasilicate | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation, especially in confined areas

**Personal protective equipment**

**Eye protection** Tightly fitting safety goggles Face-shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Repeated or prolonged contact Impervious gloves made of: PVC or Nitrile rubber
Always ensure that gloves are free from defects and that they are stored and used correctly
Frequent change is advisable

**Respiratory protection** Use only with adequate ventilation Effective dust mask. P2

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Crystals |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 12.6 | |
| **pH @ dilution** | 10 g/l | |
| **Melting / freezing point** | 1088 °C / 1990 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.4 g/mL | @22 °C |
| **Bulk density** | No information available | |
| **Relative density** | 2.4 | @ 22°C. |
| **Water solubility** | Soluble in water 270 g/L @ 30 °C | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Does not bioaccumulate | |

| | |
|---|---|
| **Explosive properties** | None |
| **Oxidizing properties** | None |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive to aluminum when wet. Gives off hydrogen by reaction with metals. Reacts violently with acids.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Excessive heat. Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Aluminum. Metals. Alkalis. Strong acids. Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** May cause respiratory irritation.

**Eye contact** Causes burns. Causes serious eye damage.

**Skin contact** Causes severe skin burns.

**Ingestion** Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Disodium metasilicate | = 1153 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Inhalation. Eye contact.

**Routes of entry** Skin contact. Inhalation. Eye contact.

**Specific target organ toxicity - Single exposure** Category 3

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Disodium metasilicate | = 210 mg/L LC50 Brachydanio rerio 96 h | No information available | = 216 mg/L EC50 Daphnia magna 96 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN3253
**UN No. (IMDG/ANTAQ)** UN3253
**UN No. (ICAO/ANAC)** UN3253

### 14.2. UN proper shipping name
DISODIUM TRIOXOSILICATE,

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** 8
**IMDG/ANTAQ Hazard class** 8
**ICAO/ANAC Hazard class/division** 8

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** PG III
**IMDG/ANTAQ Packing group** PG III
**ICAO/ANAC Packing group** PG III


### 14.5 Environmental hazard

**Marine pollutant**
No

### 14.6 Special precautions
**Hazard identification no (ADR)** 80
**EmS (IMDG)** F-A, S-B
**Emergency Action Code (EAC)** 2X
**Tunnel restriction code** E

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 22-Jan-2015 |
| **Revision date** | 08-Oct-2018 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 1, 5, 7, 8, 15, 16<br>No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 0 |
| Physical hazard | 4 |
| PPE | X |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D956
**Version** 5
**Revision date** 27-Jul-2018
**Supersedes Date:** 04-Aug-2016

# Safety Data Sheet
## Class G - Silica Blend D956

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Class G - Silica Blend D956
**Product code** D956

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1B |
| Specific target organ toxicity - Single exposure | Category 3 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Portland cement

Quartz, Crystalline silica

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Portland cement | 266-043-4 | 65997-15-1 | 60 - 80 |
| Quartz, Crystalline silica | 238-878-4 | 14808-60-7 | 10-30 |

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**

None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors/dust. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Do not eat, drink or smoke when using this product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Store away from incompatibles, Powdered aluminum Oxidizing agents Hydrofluoric acid (HF) Strong bases Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| **Chemical Name** | **Arabic** | **Australia** | **Egypt** |
|---|---|---|---|
| Portland cement | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Portland cement | 10 mg/m³ TWA | 10 mg/m³ TWA | 4 mg/m³ OEL<br>1 mg/m³ OEL |
| Quartz, Crystalline silica | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Portland cement | Not determined | Not determined | 10 mg/m³ TWA |
| Quartz, Crystalline silica | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Portland cement | 10 mg/m³ TWA | Not determined | Not determined |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Portland cement | Not determined | Not determined | Not determined |
| Quartz, Crystalline silica | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Butyl Neoprene Nitrile Rubber Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 11.0 - 13.5 | |
| **Melting / freezing point** | > 1250 °C/ 2282 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 2.75-3.20 | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture.

### 10.5 Incompatible materials

Powdered aluminum. Strong oxidizing agents. Hydrofluoric acid (HF). Strong acids. Strong bases.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause respiratory irritation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. Contact with moist skin may cause skin burns. May cause an allergic skin reaction.

**Ingestion** Ingestion may cause irritation to mucous membranes.

**Unknown acute toxicity** Not applicable.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Portland cement | No data available | No data available | No data available |
| Quartz, Crystalline silica | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Ingestion. Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Category 3 |
| **Specific target organ toxicity - Repeated exposure** | Category 2. |
| **Target organ effects** | Respiratory system. Lungs. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Portland cement | No information available | No information available | No information available |
| Quartz, Crystalline silica | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

| Chemical Name | Persistence and degradability |
|---|---|
| Quartz, Crystalline silica | Inorganic compound |

### 12.3 Bioaccumulative potential

No product level data available.

| Chemical Name | Bioaccumulation |
|---|---|
| Quartz, Crystalline silica | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Portland cement
Schedule 4
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel

**Supersedes Date:** 04-Aug-2016

| | |
|---|---|
| **Revision date** | 27-Jul-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | C |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D282
**Version** 1
**Revision date** 02-Mar-2021
**Supersedes Date:** None

# Safety Data Sheet
## CO2 Swellable Particles D282

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CO2 Swellable Particles D282
**Product code** D282

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P273 - Avoid release to the environment
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

_

**Contains**
2,6-di-tert-butyl-p-cresol

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2,6-di-tert-butyl-p-cresol | 204-881-4 | 128-37-0 | 1-<3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke), Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2,6-di-tert-butyl-p-cresol | 10 mg/m³ TWA | 10mg/m³TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2,6-di-tert-butyl-p-cresol | Not determined | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2,6-di-tert-butyl-p-cresol | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2,6-di-tert-butyl-p-cresol | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2,6-di-tert-butyl-p-cresol | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will

vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Butyl Rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.0 | @ 25°C. |
| **Water solubility** | Insoluble | |
| **Solubility in other solvents** | Partly soluble Ketone Aromatic solvents | |
| **Autoignition temperature** | No information available | |

| | |
|---|---|
| **Decomposition temperature** | > 200 °C/ 392 °F |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2,6-di-tert-butyl-p-cresol | > 2930 mg/kg ( Rat ) | > 2000 mg/kg ( Rat ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2,6-di-tert-butyl-p-cresol | = 5 mg/L LC50 Oryzias latipes 48 h | > 0.42 mg/L EC50 Desmodesmus subspicatus 72 h = 6 mg/L EC50 Pseudokirchneriella subcapitata 72 h | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2,6-di-tert-butyl-p-cresol | Not readily biodegradable |

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated

**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam

**Revision date** 02-Mar-2021

| | |
|---|---|
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID402
**Version** 13
**Revision date** 14-Nov-2018
**Supersedes Date:** 24-Feb-2017

# Safety Data Sheet
## CONQOR* 303A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** CONQOR* 303A
**Product code** PID402

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Corrosion inhibitor

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Water | 231-791-2 | 7732-18-5 | 60-100 |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | 272-712-1 | 68909-77-3 | 30-60 |

**Comments**
Based on test data – Skin corrosion/irritation (OECD 404 Skin Rabbit), this product is not corrosive or irritant.
Based on test data – Serious eye damage/irritation (EPA OPPTS: 870.2400 Eye Rabbit), this product is irritant.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid frost. Store at room temperature Avoid contact with: Acids Nitrites |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene PVC Nitrile rubber
Break through time >480 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing and gloves, including the inside, before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Dark amber |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Approximately 11.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | 151.6 °C / 305 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.10 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 4 cP | @ 25 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | < -12°C / 11°F ) |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal conditions.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Store at room temperature. Avoid frost.

### 10.5 Incompatible materials

Acids. Do not add nitrites or other nitrosating agents to this product. May cause formation of nitrosamine.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | 5000 mg/kg (Rat) | >2000 mg/kg (Rat) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | OECD; Acute LC50; 96 hours Semi-static; Fish > 45 g/l | OECD; Acute ErC50 (growth rate); 72 hours Static; Algae; 45 mg/kg OECD 201 Algae, Growth Inhibitor Test; Chronic NOECr; 72 hours Static; Algae; 3.2 mg/l | OECD; Acute EC50; 48 hours Static, Daphnia; > 100 g/l |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

No bioaccumulation expected due to high molecular weight.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR003599

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 24-Feb-2017

**Revision date** 14-Nov-2018

**Version** 13

**This SDS has been revised in the following section(s)** 1, 2, 7, 15, 16 No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D095
**Version** 5
**Revision date** 30-May-2018
**Supersedes Date:** 09-May-2016

# Safety Data Sheet
## D095 Cement Additive

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D095 Cement Additive
**Product code** D095

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Thermal decomposition can lead to release of irritating gases and vapors

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures Not applicable**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment identified in Section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid dust formation |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Use protective gloves made of: PVC Neoprene Nitrile Rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Effective dust mask. Type P1 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Fibers |
| **Odor** | None |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | > 500 °C / 932 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.6 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not applicable.

### 12.3 Bioaccumulative potential

Not applicable.

### 12.4 Mobility

**Mobility**
The product is insoluble and sinks in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Does not comply |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 09-May-2016 |
| **Revision date** | 30-May-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | 1, 7, 8, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

# Safety Data Sheet
## D600G GASBLOK* Gas Migration Control Additive

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D600G GASBLOK* Gas Migration Control Additive
**Product code** D600G

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Gas control agent Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

**Contains**
C12-15 alcohol ethyoxylated

Sodium dodecyl sulphate

1,4-Dioxane (Impurity)

5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| C12-15 alcohol ethyoxylated | 500-195-7 | 68131-39-5 | 1-<5 |
| Sodium dodecyl sulphate | 205-788-1 | 151-21-3 | >= 0.1 - <0.3 |
| 1,4-Dioxane (Impurity) | 204-661-8 | 123-91-1 | <=0.1 |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | mixture | 55965-84-9 | < 0.0015 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Heating of containers may cause pressure rise, with risk of bursting.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides, Sodium oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Repeated or prolonged contact may cause allergic reactions in very susceptible persons. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store away from heat and sources of ignition Avoid frost. Incompatible with materials which react with water. Avoid contact with: Strong acids Strong bases Strong oxidizing agents Strong reducing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| C12-15 alcohol ethyoxylated | Not determined | Not determined | Not determined |
| Sodium dodecyl sulphate | Not determined | Not determined | Not determined |
| 1,4-Dioxane (Impurity) | 90 ppm STEL<br>135 mg/m³ STEL<br>25 ppm TWA<br>90 mg/m³ TWA | 10ppmTWA<br>36mg/m³TWA | Skin designation<br>Suspected Human Carcinogen<br>20 ppm TWA<br>72 mg/m³ TWA |
| 5-chloro-2-methyl-4-isothiazolin-3-one and<br>2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| C12-15 alcohol ethyoxylated | Not determined | Not determined | Not determined |
| Sodium dodecyl sulphate | Not determined | Not determined | Not determined |
| 1,4-Dioxane (Impurity) | Not determined | 20 ppm TWA<br>90 mg/m³ TWA<br>Skin notation | May cause substantial skin absorption<br>10 ppm ACL<br>1 ppm OEL<br>3.6 mg/m³ OEL |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| C12-15 alcohol ethyoxylated | Not determined | Not determined | Not determined |
| Sodium dodecyl sulphate | Not determined | Not determined | Not determined |
| 1,4-Dioxane (Impurity) | 10 mg/m³ MAC | 90.0 mg/m³ TWA<br>25.0 ppm TWA<br>Skin notation<br>3.6 mg/m³ STEL | 25 ppm TWA<br>90 mg/m³ TWA<br>Confirmed carcinogen<br>Possibility of significant uptake through the skin |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| C12-15 alcohol ethyoxylated | Not determined | Not determined | Not determined |
| Sodium dodecyl sulphate | Not determined | Not determined | Not determined |
| 1,4-Dioxane (Impurity) | 20 ppm TWA<br>72.1 mg/m³ TWA<br>Skin notation | skin - potential for cutaneous absorption<br>100 ppm TWA<br>360 mg/m³ TWA | Skin notation<br>10 mg/m³ MAC<br>Skin |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| C12-15 alcohol ethyoxylated | Not determined | Not determined | Not determined |
| Sodium dodecyl sulphate | Not determined | Not determined | Not determined |
| 1,4-Dioxane (Impurity) | 100 ppm TWA | 10 mg/m³ TWA | 20 ppm TWA<br>73 mg/m³ TWA |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Neoprene Nitrile PVC
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Slight |
| **Color** | Milky white |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 6 - 8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | Closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | 12.60 %(V) | |
| **Lower explosion limit** | 2.60 %(V) | |
| **Vapor pressure** | < 23.5 mmgHg (31.33 hPa) | @ 25 °C |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 1.01 - 1.02 | @ 20 °C |
| **Bulk density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | No information available | |
| **Oxidizing properties** | No information available | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Do not freeze. Store away from heat and sources of ignition.

### 10.5 Incompatible materials

Incompatible with materials which react with water. Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| C12-15 alcohol ethyoxylated | 2.500- 5.000 mg/kg | = 2500 mg/kg ( Rabbit ) | No data available |
| Sodium dodecyl sulphate | = 1288 mg/kg ( Rat ) | = 200 mg/kg ( Rabbit ) | > 3900 mg/m³ ( Rat ) 1 h |
| 1,4-Dioxane (Impurity) | = 4200 mg/kg ( Rat ) = 5170 mg/kg ( Rat ) | = 7600 mg/kg ( Rabbit ) | = 46 mg/L ( Rat ) 2 h |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | = 53 mg/kg ( Rat ) | No data available | = 1.23 mg/L ( Rat ) 4 h = 0.11 mg/L ( Rat ) 4 h |

**Sensitization** EUH208 - Contains ( 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one ). May produce an allergic reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| C12-15 alcohol ethyoxylated | 3.1 mg/L LC50 (Scophthalmus maximus) = 96 h | 1 - 3.2 mg/L EC50 (Skeletonema costatum) = 72 h | 0.88 mg/L LC50 (Acartia tonsa) = 48 h |
| Sodium dodecyl sulphate | = 1.31 mg/L LC50 Cyprinus carpio 96 h 10.8 - 16.6 mg/L LC50 Poecilia reticulata 96 h 13.5 - 18.3 mg/L LC50 Poecilia reticulata 96 h 6.2 - 9.6 mg/L LC50 Pimephales promelas 96 h 10.2 - 22.5 mg/L LC50 Pimephales promelas 96 h 5.8 - 7.5 mg/L LC50 Pimephales promelas 96 h = 4.5 mg/L LC50 Lepomis macrochirus 96 h 4.2 - 4.8 mg/L LC50 Lepomis macrochirus 96 h 4.06 - 5.75 mg/L LC50 Lepomis macrochirus 96 h 9.9 - 20.1 mg/L LC50 Brachydanio rerio 96 h = 7.97 mg/L LC50 Brachydanio rerio 96 h = 4.2 mg/L LC50 Oncorhynchus mykiss 96 h = 4.62 mg/L LC50 Oncorhynchus mykiss 96 h 4.3 - 8.5 | = 42 mg/L EC50 Desmodesmus subspicatus 96 h = 117 mg/L EC50 Pseudokirchneriella subcapitata 96 h = 53 mg/L EC50 Desmodesmus subspicatus 72 h 30 - 100 mg/L EC50 Desmodesmus subspicatus 96 h 3.59 - 15.6 mg/L EC50 Pseudokirchneriella subcapitata 96 h | = 1.8 mg/L EC50 Daphnia magna 48 h = 21.2 mg/L EC50 Daphnia magna 24 h |

| | | | |
|---|---|---|---|
| | mg/L LC50 Oncorhynchus mykiss 96 h 22.1 - 22.8 mg/L LC50 Pimephales promelas 96 h 15 - 18.9 mg/L LC50 Pimephales promelas 96 h 8 - 12.5 mg/L LC50 Pimephales promelas 96 h = 4.1 mg/L LC50 Leuciscus idus 48 h | | |
| 1,4-Dioxane (Impurity) | = 9850 mg/L LC50 Pimephales promelas 96 h 10306 - 14742 mg/L LC50 Pimephales promelas 96 h > 10000 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 163 mg/L EC50 water flea 48 h |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | = 1.6 mg/L LC50 Oncorhynchus mykiss 96 h | 0.11 - 0.16 mg/L EC50 Pseudokirchneriella subcapitata 72 h 0.03 - 0.13 mg/L EC50 Pseudokirchneriella subcapitata 96 h = 0.31 mg/L EC50 Anabaena flos-aquae 120 h | 0.12 - 0.3 mg/L EC50 Daphnia magna 48 h 0.71 - 0.99 mg/L EC50 Daphnia magna 48 h = 4.71 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| C12-15 alcohol ethyoxylated | Readily degradable in marine screening test |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| C12-15 alcohol ethyoxylated | Not likely to bioaccumulate |

### 12.4 Mobility

**Mobility**
Dispersible in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| C12-15 alcohol ethyoxylated | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| C12-15 alcohol ethyoxylated | No information available |

### 12.5 Other adverse effects

None known. Check for additional information in sect. 7.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

1,4-Dioxane (Impurity)
Schedule 6
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one
Schedule 6

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required

**Group number** Not required

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 15-Jul-2016 |
| **Revision date** | 26-Apr-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no**

**responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID20095
**Version** 2
**Revision date** 07-Jul-2018
**Supersedes Date:** 25-Nov-2015

# Safety Data Sheet
## DEFOAM EXTREME*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DEFOAM EXTREME*
**Product code** PID20095

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Defoamer

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** , No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
May cause slight irritation

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Silicon oxide, Formaldehyde.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. If spilled, take caution, as material can cause surfaces to become very slippery. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Avoid spills and splashing during use. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Keep at 2 - 26°C Protect from freezing Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Contains no substances with occupational exposure limit values No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile<br>Break through time >480 minutes |

| | |
|---|---|
| | Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing and gloves Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Opaque |
| **Odor** | Mild |
| **Color** | Milky white |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | > 100 °C / > 212 °F | estimated |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | < 20 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.01 g/cm³ | @ 20°C. |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** No information available

| | |
|---|---|
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -6.66°C / 20°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Not chemically reactive.**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Protect from freezing. Keep at 2 - 26°C.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. May cause skin irritation and/or dermatitis. Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

This product is expected to be readily biodegradable.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Dispersible in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**
**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 25-Nov-2015 |
| **Revision date** | 07-Jul-2018 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 2, 7, 8, 15, 16 Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com

Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID18960
**Version** 4
**Revision date** 28-Jan-2019
**Supersedes Date:** 09-Oct-2015

# Safety Data Sheet
## DEFOAM PLUS* NS

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DEFOAM PLUS* NS
**Product code** PID18960

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Defoamer

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.95 - 0.97 kg/l | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

| | |
|---|---|
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **LD50 Oral** | > 2000 mg/kg (rat) (based on components) (MIXTURE) |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae. (LC50 > 100 mg/l - aquatic species (MIXTURE)).

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

The product contains potentially bioaccumulating substances.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 09-Oct-2015 |
| **Revision date** | 28-Jan-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID150
**Version** 8
**Revision date** 30-Jan-2020
**Supersedes Date:** 20-Apr-2016

# Safety Data Sheet
## DEFOAM*-A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DEFOAM*-A
**Product code** PID150
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Defoamer

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2A |
| Reproductive toxicity | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation
H361 - Suspected of damaging fertility or the unborn child

**Precautionary statements**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Contains**
2,2,4-trimethyl-1,3-pentanediol diisobutyrate

1,3-pentanediol, 2,2,4-trimethyl-

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | 229-934-9 | 6846-50-0 | 10-30 |
| 1,3-pentanediol, 2,2,4-trimethyl- | 205-619-1 | 144-19-4 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | Not determined | Not determined | Not determined |
| 1,3-pentanediol, 2,2,4-trimethyl- | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | Not determined | Not determined | Not determined |
| 1,3-pentanediol, 2,2,4-trimethyl- | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | Not determined | Not determined | Not determined |
| 1,3-pentanediol, 2,2,4-trimethyl- | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | Not determined | Not determined | Not determined |
| 1,3-pentanediol, 2,2,4-trimethyl- | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | Not determined | Not determined | Not determined |
| 1,3-pentanediol, 2,2,4-trimethyl- | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -50 °C / -58 °F | |
| **Boiling point/range** | 255 °C / 491 °F | |
| **Flash point** | 110 °C / 230 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.95 | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | > 3200 mg/kg ( Rat ) | > 2000 mg/kg (rabbit) - Literature data | > 5.3 mg/L ( Rat ) 6 h |
| 1,3-pentanediol, 2,2,4-trimethyl- | = 2 g/kg ( Rat ) | = 6300 µL/kg ( Rabbit ) | > 4.5 mg/L ( Rat ) 6 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** Suspected of damaging fertility or the unborn child.

**Routes of Exposure** Eye contact.

**Routes of entry** None known.

**Specific target organ toxicity -** Not classified

**Single exposure**
**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2,2,4-trimethyl-1,3-pentanediol diisobutyrate | > 1.55 mg/L LC50 Pimephales promelas 96 h | > 7.49 mg/l EC50 - 72 h - Literature data | > 1.46 mg/L EC50 Daphnia magna 48 h |
| 1,3-pentanediol, 2,2,4-trimethyl- | > 700 mg/L LC50 Lepomis macrochirus 96 h | > 100 mg/l EC50 - 72 h - Literature data | > 100 mg/l EC50 - 48 h - Literature data |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002503 |
| **Group number** | 6.4A, 6.8A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 20-Apr-2016 |
| **Revision date** | 30-Jan-2020 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 1 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID3378
**Version** 6
**Revision date** 03-Feb-2017
**Supersedes Date:** 26-Oct-2015

# Safety Data Sheet
## DI-BALANCE*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DI-BALANCE*
**Product code** PID3378

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Magnesium oxide

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Magnesium oxide | 215-171-9 | 1309-48-4 | 60-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Avoid generating or

breathing dust.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Interhalogens. Acids Water

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Magnesium oxide | 10 mg/m³ TWA | 10mg/m³TWAfume | 10 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Magnesium oxide | Not determined | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Magnesium oxide | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Magnesium oxide | 10 mg/m³ TWA | 15 mg/m³ TWA | 4 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Magnesium oxide | Not determined | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

| | |
|---|---|
| **Personal protective equipment** | |
| **Eye protection** | Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Nitrile Neoprene PVC Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 10.0 - 11.0 | @ 10% |
| **Melting / freezing point** | 2100 °C / 3800 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | n/a | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 30-40 lb/ft3 | |
| **Relative density** | 3.56 sg | @ 25°C. |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

The product reacts with water and will generate heat.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Interhalogens. Acids. Water.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Magnesium oxide | = 3990 mg/kg ( Rat ) = 3870 | No data available | No data available |

| | | | |
|---|---|---|---|
| | mg/kg ( Rat ) | | |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Magnesium oxide | No information available | No information available | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Magnesium oxide | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Magnesium oxide | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Magnesium oxide | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Magnesium oxide | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 26-Oct-2015 |
| **Revision date** | 03-Feb-2017 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | 5, 8, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

# Driscal® D Polymer

Version 1.14 Revision Date 2021-09-29

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2015/830

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**1.1**

**Product information**

Product Name : Driscal® D Polymer
Material : 1112534, 1016818

**EC-No.Registration number**

| Chemical name | CAS-No.<br>EC-No.<br>Index No. | Legal Entity<br>Registration number |
|---|---|---|
| 2-Acrylamido-2-Methylpropane Sulfonic Acid, Sodium Salt | 5165-97-9<br>225-948-4 | Chevron Phillips Chemicals International NV<br>01-2119495270-39-0016 |
| 2-Pyrrolidinone, 1-ethenyl- | 88-12-0<br>201-800-4<br>613-168-00-0 | Chevron Phillips Chemicals International NV<br>01-2119498301-39-XXXX |

**1.3**

**Details of the supplier of the safety data sheet**

**Company** : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Local : Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vincilaan 19
1831 Diegem
Belgium

SDS Requests: (800) 852-5530
Responsible Party: Product Safety Group
Email:sds@cpchem.com

**1.4**

**Emergency telephone:**

**Health**:

866.442.9628 (North America)
1.832.813.4984 (International)
**Transport**:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

| | | |
|---|---|---|
| Responsible Department | : | Product Safety and Toxicology Group |
| E-mail address | : | SDS@CPChem.com |
| Website | : | www.CPChem.com |

## SECTION 2: Hazards identification

**2.1**

**Classification of the substance or mixture**
**REGULATION (EC) No 1272/2008**

Not a hazardous substance or mixture.

**2.2**

**Labeling (REGULATION (EC) No 1272/2008)**

Not a hazardous substance or mixture.

## SECTION 3: Composition/information on ingredients

**3.1 - 3.2**
**Substance or Mixture**

| | | |
|---|---|---|
| Synonyms | : | High Temperature Polymer |

Contains no hazardous ingredients according to GHS. :

| | | |
|---|---|---|
| Remarks | : | Contains no hazardous ingredients according to GHS. |

## SECTION 4: First aid measures

**4.1**

**Description of first-aid measures**

| | | |
|---|---|---|
| General advice | : | No hazards which require special first aid measures. |
| If inhaled | : | If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician. |
| In case of eye contact | : | Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist. |
| If swallowed | : | Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious |

person. If symptoms persist, call a physician.

## SECTION 5: Firefighting measures

| | | |
|---|---|---|
| Flash point | : | Not applicable |
| Autoignition temperature | : | No data available |

**5.1 Extinguishing media**

| | | |
|---|---|---|
| Unsuitable extinguishing media | : | High volume water jet. |

**5.2 Special hazards arising from the substance or mixture**

| | | |
|---|---|---|
| Specific hazards during fire fighting | : | Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges. |

**5.3 Advice for firefighters**

| | | |
|---|---|---|
| Special protective equipment for fire-fighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
| Further information | : | Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Fire and explosion protection | : | Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed. |

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

| | | |
|---|---|---|
| Personal precautions | : | Avoid dust formation. |

**6.2 Environmental precautions**

| | | |
|---|---|---|
| Environmental precautions | : | No special environmental precautions required. |

**6.3 Methods and materials for containment and cleaning up**

| | | |
|---|---|---|
| Methods for cleaning up | : | Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. |
| Additional advice | : | Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). |

**6.4**

**Reference to other sections**

| | | |
|---|---|---|
| Reference to other sections | : | For personal protection see section 8. For disposal considerations see section 13. |

## SECTION 7: Handling and storage

**7.1**

**Precautions for safe handling**
**Handling**

| | | |
|---|---|---|
| Advice on safe handling | : | For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. |
| Advice on protection against fire and explosion | : | Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed. |

**7.2**

**Conditions for safe storage, including any incompatibilities**

**Storage**

| | | |
|---|---|---|
| Requirements for storage areas and containers | : | Electrical installations / working materials must comply with the technological safety standards. |
| Advice on common storage | : | No materials to be especially mentioned. |

## SECTION 8: Exposure controls/personal protection

**8.2**

**Exposure controls**
**Engineering measures**

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure |

levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

| | | |
|---|---|---|
| Hand protection | : | The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. |
| Eye protection | : | Eye wash bottle with pure water. Safety glasses. |
| Skin and body protection | : | Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Protective suit. Safety shoes. |
| Hygiene measures | : | General industrial hygiene practice. |

## SECTION 9: Physical and chemical properties

**9.1**

**Information on basic physical and chemical properties**

**Appearance**

| | | |
|---|---|---|
| Form | : | Powder |
| Physical state | : | solid |
| Color | : | White |
| Odor | : | no odor |
| Odor Threshold | : | No data available |

**Safety data**

| | | |
|---|---|---|
| Flash point | : | Not applicable |
| Lower explosion limit | : | No data available |
| Upper explosion limit | : | No data available |
| Oxidizing properties | : | No |
| Autoignition temperature | : | No data available |
| Thermal decomposition | : | No data available |
| Molecular weight | : | Not applicable |
| pH | : | Not applicable |
| Pour point | : | No data available |
| Boiling point/boiling range | : | No data available |

| | | |
|---|---|---|
| Vapor pressure | : | No data available |
| Relative density | : | 1,44 |
| Density | : | No data available |
| Water solubility | : | soluble |
| Partition coefficient: n-octanol/water | : | Pow: < 3 |
| Viscosity, kinematic | : | No data available |
| Relative vapor density | : | No data available |
| Evaporation rate | : | No data available |

## SECTION 10: Stability and reactivity

**10.1**

**Reactivity** : Stable at normal ambient temperature and pressure.

**10.2**

**Chemical stability** : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**10.3**

**Possibility of hazardous reactions**

**Hazardous reactions** : Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

**10.4**

**Conditions to avoid** : No data available.

**10.5**

**Materials to avoid** : No data available.

**Thermal decomposition** : No data available

**10.6**

**Other data** : No decomposition if stored and applied as directed.

## SECTION 11: Toxicological information

**11.1**

**Information on toxicological effects**

**Driscal® D Polymer**

**Further information** : The product contains no substances classified as hazardous to health in concentrations which should be taken into account.

## SECTION 12: Ecological information

**12.1**
**Toxicity**

**Ecotoxicity effects**

**Toxicity to fish** : LC50: > 1.800 mg/l
Exposure time: 96 h
Species: Scophthalmus maximus (Flatfish, Flounder)
static test Method: PARCOM Protocol Part B

**Toxicity to daphnia and other aquatic invertebrates** : LC50: 599 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
static test Method: ISO TC147/SC5/WG2

**Toxicity to algae** : EC50: 2.693 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (marine diatom)
static test Method: ISO 10253

**12.2**
**Persistence and degradability**

Biodegradability : This material is not expected to be readily biodegradable.

**12.3**
**Bioaccumulative potential**
Elimination information (persistence and degradability)

Bioaccumulation : Accumulation in aquatic organisms is unlikely.
The polymer is too large to be bioavailable.

**12.4**
**Mobility in soil**

Mobility : No data available

**12.5**
**Results of PBT and vPvB assessment**
Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6**
**Other adverse effects**
Additional ecological information : This material is not expected to be harmful to aquatic organisms.

**Ecotoxicology Assessment**

| | | |
|---|---|---|
| Short-term (acute) aquatic hazard | : | This material is not expected to be harmful to aquatic organisms. |
| Long-term (chronic) aquatic hazard | : | This material is not expected to be harmful to aquatic organisms. |

## SECTION 13: Disposal considerations

**13.1**

**Waste treatment methods**

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

| | | |
|---|---|---|
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal. |

## SECTION 14: Transport information

**14.1 - 14.7**

**Transport information**

**The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).**

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

**Maritime transport in bulk according to IMO instruments**

## SECTION 15: Regulatory information

**15.1**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**
**National legislation**

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

**Water contaminating class (Germany)** : nwg not water endangering

**15.2**

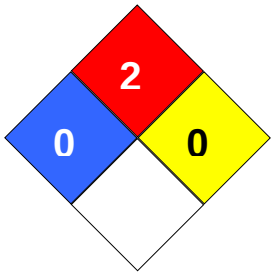
**Major Accident Hazard Legislation** : ZEU_SEVES3 Update:
Not applicable

**Notification status**

| | | |
|---|---|---|
| Europe REACH | : | On the inventory, or in compliance with the inventory |
| Switzerland CH INV | : | On the inventory, or in compliance with the inventory |
| United States of America (USA) TSCA | : | All substances listed as active on the TSCA inventory |
| Canada DSL | : | All components of this product are on the Canadian DSL |
| Other AIIC | : | On the inventory, or in compliance with the inventory |
| New Zealand NZIoC | : | On the inventory, or in compliance with the inventory |
| Japan ENCS | : | On the inventory, or in compliance with the inventory |
| Taiwan TCSI | : | Not in compliance with the inventory |
| Korea KECI | : | Not in compliance with the inventory |
| Philippines PICCS | : | Not in compliance with the inventory |
| China IECSC | : | This product contains one or more substances that have been notified under New Substances Notification laws. However, only CPChem and other independent notifiers are approved to be the importers of record. |

## SECTION 16: Other information

**NFPA Classification** : Health Hazard: 0
Fire Hazard: 2
Reactivity Hazard: 0




**Further information**

Legacy SDS Number : 244990

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

| Key or legend to abbreviations and acronyms used in the safety data sheet | | | |
|---|---|---|---|
| ACGIH | American Conference of Government Industrial Hygienists | LD50 | Lethal Dose 50% |
| AICS | Australia, Inventory of Chemical Substances | LOAEL | Lowest Observed Adverse Effect Level |
| DSL | Canada, Domestic Substances List | NFPA | National Fire Protection Agency |
| NDSL | Canada, Non-Domestic Substances List | NIOSH | National Institute for Occupational Safety & Health |
| CNS | Central Nervous System | NTP | National Toxicology Program |
| CAS | Chemical Abstract Service | NZIoC | New Zealand Inventory of Chemicals |
| EC50 | Effective Concentration | NOAEL | No Observable Adverse Effect Level |
| EC50 | Effective Concentration 50% | NOEC | No Observed Effect Concentration |
| EGEST | EOSCA Generic Exposure Scenario Tool | OSHA | Occupational Safety & Health Administration |
| EOSCA | European Oilfield Specialty Chemicals Association | PEL | Permissible Exposure Limit |
| EINECS | European Inventory of Existing Chemical Substances | PICCS | Philippines Inventory of Commercial Chemical Substances |
| MAK | Germany Maximum Concentration Values | PRNT | Presumed Not Toxic |
| GHS | Globally Harmonized System | RCRA | Resource Conservation Recovery Act |
| >= | Greater Than or Equal To | STEL | Short-term Exposure Limit |
| IC50 | Inhibition Concentration 50% | SARA | Superfund Amendments and Reauthorization Act. |
| IARC | International Agency for Research on Cancer | TLV | Threshold Limit Value |
| IECSC | Inventory of Existing Chemical Substances in China | TWA | Time Weighted Average |
| ENCS | Japan, Inventory of Existing and | TSCA | Toxic Substance Control Act |

| | | | |
|---|---|---|---|
| | New Chemical Substances | | |
| KECI | Korea, Existing Chemical Inventory | UVCB | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | | |

**SDS no.** PID18257
**Version** 4
**Revision date** 16-Jun-2017
**Supersedes Date:** 23-Feb-2017

# Safety Data Sheet
## D-SOLVER 7*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-SOLVER 7*
**Product code** PID18257
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Chelating agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Tripotassium hydrogen 2,2',2'',2'''-(ethane-1,2-diyldinitrilo)tetraacetate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Tripotassium hydrogen 2,2',2'',2'''-(ethane-1,2-diyldinitrilo)tetraacetate | 241-543-5 | 17572-97-3 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel

should) give oxygen. Obtain medical attention.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits**
The product does not contain any hazardous materials with occupational exposure limits established.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Tripotassium hydrogen 2,2',2",2'"-(ethane-1,2-diyldinitrilo)tetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Tripotassium hydrogen 2,2',2",2'"-(ethane-1,2-diyldinitrilo)tetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Tripotassium hydrogen 2,2',2",2'"-(ethane-1,2-diyldinitrilo)tetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Tripotassium hydrogen 2,2',2",2'"-(ethane-1,2-diyldinitrilo)tetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Tripotassium hydrogen 2,2',2",2'"-(ethane-1,2-diyldinitrilo)tetraacetate | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown)

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight Ammoniacal |
| **Color** | Light yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7.7 - 8.1 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 105 - 110 °C / 221 - 230 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.30 - 1.32 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Harmful by inhalation. May cause damage to organs through prolonged or repeated exposure.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Tripotassium hydrogen 2,2',2'',2'''-(ethane-1,2-diyldinitrilo)tetraacetate | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Tripotassium hydrogen 2,2',2'',2'''-(ethane-1,2-diyldinitrilo)tetraacetate | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
< 0

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 23-Feb-2017 |
| **Revision date** | 16-Jun-2017 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 1, 14, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID18883
**Version** 4
**Revision date** 13-Mar-2019
**Supersedes Date:** 07-Jun-2017

# Safety Data Sheet
## D-SOLVER EXTRA*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-SOLVER EXTRA*
**Product code** PID18883

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Chelating agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

**Contains**
N-(2-Hydroxyethyl)ethylenediaminetriacetic acid

Trisodium [{ 2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate

2,2",2"-nitrilotriacetic acid

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | 205-759-3 | 150-39-0 | 10-30 |
| Trisodium [{ 2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | 205-381-9 | 139-89-9 | 10-30 |
| 2,2",2"-nitrilotriacetic acid | 205-355-7 | 139-13-9 | <5 |

**Comments**
H318 do not apply. The overall product classification is H319 due to pH.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**

Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Not determined | Not determined | Not determined |
| Trisodium [{2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | Not determined | Not determined | Not determined |
| 2,2",2"-nitrilotriacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Not determined | Not determined | Not determined |
| Trisodium [{2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | Not determined | Not determined | Not determined |
| 2,2",2"-nitrilotriacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Not determined | Not determined | Not determined |
| Trisodium [{2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | Not determined | Not determined | Not determined |
| 2,2",2"-nitrilotriacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Not determined | Not determined | Not determined |
| Trisodium [{2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | Not determined | Not determined | Not determined |
| 2,2",2"-nitrilotriacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Not determined | Not determined | Not determined |
| Trisodium [{2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | Not determined | Not determined | Not determined |
| 2,2",2"-nitrilotriacetic acid | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Nitrile Neoprene PVC<br>Break through time >480 minutes<br>Glove thickness =>0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight Ammoniacal |
| **Color** | Clear - Dark |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 4.4 - 5.0 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 105 - 110 °C / 221 - 230 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.15 - 1.25 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |

| | |
|---|---|
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | <0 |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Causes serious eye irritation. |
| **Skin contact** | Causes skin irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**LD50 Oral** > 2000 mg/kg Calculated (PRODUCT)

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | No data available | No data available | No data available |
| Trisodium [{ 2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | = 10000 mg/kg ( Rat ) | No data available | No data available |
| 2,2'',2''-nitrilotriacetic acid | = 1100 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact. Skin contact.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | No information available | No information available | No information available |
| Trisodium [{ | No information available | No information available | No information available |

| | | | |
|---|---|---|---|
| 2-[bis(carboxylatomethyl)amino]ethyl} (2-hydroxyethyl)amino]acetate | | | |
| 2,2'',2''-nitrilotriacetic acid | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Moderate biodegradation |
| 2,2'',2''-nitrilotriacetic acid | Moderate biodegradation |

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| N-(2-Hydroxyethyl)ethylenediaminetriacetic acid | Does not bioaccumulate |
| 2,2'',2''-nitrilotriacetic acid | Not likely to bioaccumulate |

**log Pow**
<0

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 07-Jun-2017 |
| **Revision date** | 13-Mar-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 1, 2, 7, 8, 9, 12, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID17208
**Version** 4
**Revision date** 21-Jun-2017
**Supersedes Date:** 17-Aug-2016

# Safety Data Sheet
## D-SOLVER HD*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-SOLVER HD*
**Product code** PID17208

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Completion fluid additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

**Contains**
N,N-Bis(carboxymethyl)-L-glutamic acid

Nitrilotriacetic acid

Glycolic acid (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| N,N-Bis(carboxymethyl)-L-glutamic acid | 261-530-8 | 58976-65-1 | 10-30 |
| Glycolic acid (impurity) | 201-180-5 | 79-14-1 | <3 |
| Nitrilotriacetic acid | 205-355-7 | 139-13-9 | <3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits**

Contains no substances with occupational exposure limit values
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| N,N-Bis(carboxymethyl)-L-glutamic acid | Not determined | Not determined | Not determined |
| Nitrilotriacetic acid | Not determined | Not determined | Not determined |
| Glycolic acid (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| N,N-Bis(carboxymethyl)-L-glutamic acid | Not determined | Not determined | Not determined |
| Nitrilotriacetic acid | Not determined | Not determined | Not determined |
| Glycolic acid (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| N,N-Bis(carboxymethyl)-L-glutamic acid | Not determined | Not determined | Not determined |
| Nitrilotriacetic acid | Not determined | Not determined | Not determined |
| Glycolic acid (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| N,N-Bis(carboxymethyl)-L-glutamic acid | Not determined | Not determined | Not determined |
| Nitrilotriacetic acid | Not determined | Not determined | Not determined |
| Glycolic acid (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| N,N-Bis(carboxymethyl)-L-glutamic acid | Not determined | Not determined | Not determined |
| Nitrilotriacetic acid | Not determined | Not determined | Not determined |
| Glycolic acid (impurity) | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Viton Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight Ammoniacal |
| **Color** | Dark amber - Clear Yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 3.4 - 3.8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Non-flammable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1150 - 1380 kg/m³ | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| N,N-Bis(carboxymethyl)-L-glutamic acid | No data available | No data available | No data available |
| Nitrilotriacetic acid | = 1100 mg/kg ( Rat ) | No data available | No data available |
| Glycolic acid (impurity) | = 1950 mg/kg ( Rat ) | No data available | = 3.6 mg/L ( Rat ) 4 h > 5.2 mg/L ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

| | |
|---|---|
| **Routes of Exposure** | Skin contact. Eye contact. |
| **Routes of entry** | Skin contact. Eye contact. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| N,N-Bis(carboxymethyl)-L-glutamic acid | No information available | No information available | No information available |
| Nitrilotriacetic acid | EC50: >100mg/l (24h, Daphnia magna) | No information available | No information available |
| Glycolic acid (impurity) | > 5000 mg/L LC50 Brachydanio rerio 96 h | No information available | No information available |

### 12.2 Persistence and degradability

Readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
<0

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Glycolic acid (impurity)
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 17-Aug-2016 |
| **Revision date** | 21-Jun-2017 |

| | |
|---|---|
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 1, 2, 8, 14, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID17038
**Version** 5
**Revision date** 25-Feb-2021
**Supersedes Date:** 16-Jun-2017

# Safety Data Sheet
## D-SOLVER* D

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-SOLVER* D
**Product code** PID17038

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Chelating agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Serious eye damage/eye irritation | Category 2 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P314 - Get medical advice/attention if you feel unwell
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Contains**
Ethylenediaminetetraacetic acid

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ethylenediaminetetraacetic acid | 200-449-4 | 60-00-4 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. Obtain medical attention.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ethylenediaminetetraacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethylenediaminetetraacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethylenediaminetetraacetic acid | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethylenediaminetetraacetic acid | Not determined | Not determined | 2 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethylenediaminetetraacetic acid | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

**Physical state** — Solid
**Appearance** — Powder Dust

| | |
|---|---|
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 2-3 | Conc. solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | >= 40 g/m³ | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.6 - 0.8 | |
| **Bulk density** | ~800 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | slightly soluble | ~0.2 (g/100g H2O@20°C) |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | > 200 °C / > 392 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | < 0 | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Harmful by inhalation. May cause damage to organs through prolonged or repeated exposure.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethylenediaminetetraacetic acid | 4500 mg/kg (Rat)<br>OECD 401<br>ECHA Data | No data available | > 1 - 5 mg/l 4h dust/mist<br>OECD 412<br>Vendor Data |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethylenediaminetetraacetic acid | > 100 mg/l 96h LC50<br>Lepomis macrochirus (Bluegill sunfish)<br>Vendor data | > 300 mg/L 72h EC50<br>Pseudokirchneriella subcapitata (green algae)<br>Vendor Data | 140 mg/L 48h EC50<br>Daphnia magna<br>Vendor Data |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
< 0

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ethylenediaminetetraacetic acid
Schedule 4

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 16-Jun-2017 |
| **Revision date** | 25-Feb-2021 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS**

**information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID11926
**Version** 7
**Revision date** 16-Aug-2019
**Supersedes Date:** 22-Sep-2015

# Safety Data Sheet
## D-SOLVER*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-SOLVER*
**Product code** PID11926
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Corrosion inhibitor Scale dissolver

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Dipotassium ethylenediaminetetraacetate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Dipotassium ethylenediaminetetraacetate | 217-895-0 | 2001-94-7 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Excessive heat Strong oxidizing agents Bases Aluminum Nickel Copper Zinc

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Dipotassium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Dipotassium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Dipotassium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Dipotassium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Dipotassium ethylenediaminetetraacetate | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Butyl PVC<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight Ammoniacal |
| **Color** | Yellow |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 4.5 - 5.0 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 105 - 110 °C / 221 - 230 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |

| | |
|---|---|
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | Similar to water |
| **Vapor density** | Similar to water. |
| **Specific gravity** | 1.1 - 1.2 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Stable under recommended storage conditions.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Excessive heat.

**10.5 Incompatible materials**

Strong oxidizing agents. Aluminum. Nickel. Copper. Zinc. Bases.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Dipotassium ethylenediaminetetraacetate | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Dipotassium ethylenediaminetetraacetate | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |

| | |
|---|---|
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 22-Sep-2015 |
| **Revision date** | 16-Aug-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID14578
**Version** 4
**Revision date** 08-Jun-2019
**Supersedes Date:** 20-Dec-2018

# Safety Data Sheet
## D-STRUCTOR*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** D-STRUCTOR*
**Product code** PID14578
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filter cake remover.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H318 - Causes serious eye damage

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P270 - Do not eat, drink or smoke when using this product
P330 - Rinse mouth

**Contains**
2-(formyloxy)ethyl formate

Ethylene Glycol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-(formyloxy)ethyl formate | 211-077-7 | 629-15-2 | 10-30 |
| Ethylene Glycol | 203-473-3 | 107-21-1 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-(formyloxy)ethyl formate | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 40ppmSTELvapour<br>104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 39.4 ppm Ceiling<br>100 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-(formyloxy)ethyl formate | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-(formyloxy)ethyl formate | Not determined | Not determined | Not determined |
| Ethylene Glycol | 5 mg/m³ MAC | 125 mg/m³ TWA<br>50.0 ppm TWA<br>100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2-(formyloxy)ethyl formate | Not determined | Not determined | Not determined |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-(formyloxy)ethyl formate | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA<br>52 mg/m³ TWA |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness 0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No personal respiratory protective equipment normally required When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with a vapor filter (EN 141) Type ABEKP At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing

before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Pungent |
| **Color** | Colorless - Pale yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 4.0 - 4.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | 93 °C / 200 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.15 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong alkalies.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Harmful if swallowed.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-(formyloxy)ethyl formate | = 1510 mg/kg ( Rat ) | No data available | No data available |
| Ethylene Glycol | = 4700 mg/kg ( Rat ) | = 9530 µL/kg ( Rabbit ) = 10600 mg/kg ( Rat ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Eye contact. Ingestion. |
| **Routes of entry** | Eye contact. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-(formyloxy)ethyl formate | No information available | No information available | No information available |
| Ethylene Glycol | = 16000 mg/L LC50 Poecilia reticulata 96 h 40000 - 60000 mg/L LC50 Pimephales promelas 96 h = 40761 mg/L LC50 Oncorhynchus mykiss 96 h = 27540 mg/L LC50 Lepomis macrochirus 96 h 14 - 18 mL/L LC50 Oncorhynchus mykiss 96 h = 41000 mg/L LC50 Oncorhynchus mykiss 96 h | 6500 - 13000 mg/L EC50 Pseudokirchneriella subcapitata 96 h | = 46300 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-(formyloxy)ethyl formate | Rapidly biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2-(formyloxy)ethyl formate | Not likely to bioaccumulate log Kow <3 |

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ethylene Glycol
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Does not comply |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 20-Dec-2018 |
| **Revision date** | 08-Jun-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 1 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID552
**Version** 8
**Revision date** 08-Mar-2019
**Supersedes Date:** 19-Feb-2018

# Safety Data Sheet
## DUAL-FLO* HT

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DUAL-FLO* HT
**Product code** PID552

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtration-control.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Starch

**2.3 Other hazards**

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Starch | 232-679-6 | 9005-25-8 | 60-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Starch | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Starch | Not determined | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Starch | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Starch | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Starch | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical

hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. See section 7 for more information

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Mild |
| **Color** | White - Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5.0 - 8.0 | @4% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | @ 20 °C |
| **Bulk density** | 30 - 45 lb/ft³ | |
| **Relative density** | No information available | |

| | |
|---|---|
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Starch | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Starch | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 19-Feb-2018 |
| **Revision date** | 08-Mar-2019 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | 1, 2, 15, No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2035
**Version** 8
**Revision date** 08-Mar-2019
**Supersedes Date:** 14-Mar-2018

# Safety Data Sheet
## DUAL-FLO*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DUAL-FLO*
**Product code** PID2035

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtration-control.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components
**2.3 Other hazards**

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust

formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Protect from moisture Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient |

| | |
|---|---|
| | ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Slight |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 9.0 - 10.5 | @4% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | 20 °C |
| **Bulk density** | 30-40 lb/lb/ft³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 14-Mar-2018 |
| **Revision date** | 08-Mar-2019 |
| **Version** | 8 |
| **This SDS has been revised in the** | 1, 2, 15, No changes with regard to classification have been made. |

**following section(s)**

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood Follow general hygiene considerations recognized as common good workplace practices

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2112
**Version** 4
**Revision date** 24-Jul-2018
**Supersedes Date:** 05-Jan-2016

# Safety Data Sheet
## DUO-TEC*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DUO-TEC*
**Product code** PID2112

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Glyoxal

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Glyoxal | 203-474-9 | 107-22-2 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Suspended dust may present a dust explosion hazard. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Use non-sparking tools and equipment. Take precautionary measures against static discharges.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Persons susceptible to allergic reactions should not handle this product. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Glyoxal | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Butyl Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Mild |
| **Color** | Cream - Tan |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 7 | @ 1% sol. |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |

| | | |
|---|---|---|
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | 20 °C |
| **Bulk density** | 50 lb/ft³ (800 kg/m³) | |
| **Relative density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | > 200 °C / > 392 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Protect from moisture.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Glyoxal | = 200 mg/kg ( Rat ) | = 12700 mg/kg ( Rabbit ) | = 2410 mg/m³, 3-4 hrs |

**Sensitization** EUH208 - Contains ( Glyoxal ). May produce an allergic reaction.

**Mutagenic effects** Contains an known or suspected mutagen.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact.

**Routes of entry** Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Glyoxal | > 1000 mg/l LC50 Scophthalmus Maximus 96h SLB data | 207 mg/l EC50 Skeletonema 72h SLB data | 259 mg/L LC50 Acartia 48h SLB Data |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Glyoxal | Not biodegradable (<60% 28 days) |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Glyoxal | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Dispersible in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused** Dispose of in accordance with local regulations.

**products**

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated
**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the**

**occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 05-Jan-2016 |
| **Revision date** | 24-Jul-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no**

**responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID510
**Version** 12
**Revision date** 16-Nov-2018
**Supersedes Date:** 09-Jul-2018

# Safety Data Sheet
## DUO-VIS*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** DUO-VIS*
**Product code** PID510

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Glyoxal

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Glyoxal | 203-474-9 | 107-22-2 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Glyoxal | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Butyl Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Mild |
| **Color** | Cream - Tan |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 7 | @ 1% sol. |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |

| | | |
|---|---|---|
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | 20 °C |
| **Bulk density** | 50 lb/ft³ (800 kg/m³) | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | > 200 °C / > 392 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Avoid dust formation. Heat, flames and sparks. Protect from moisture.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Glyoxal | = 200 mg/kg ( Rat ) | = 12700 mg/kg ( Rabbit ) | = 2410 mg/m³, 3-4 hrs |

**Sensitization** EUH208 - Contains ( Glyoxal ). May produce an allergic reaction.

**Mutagenic effects** Contains an known or suspected mutagen.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Glyoxal | = 215 mg/L LC50 Pimephales | <= 348.59 mg/L EC50 | = 404 mg/L EC50 Daphnia magna |

| | | | |
|---|---|---|---|
| | promelas 96 h 460 - 680 mg/L LC50 Leuciscus idus 96 h | Pseudokirchneriella subcapitata 96 h > 500 mg/L EC50 Desmodesmus subspicatus 96 h > 500 mg/L EC50 Desmodesmus subspicatus 72 h | 48 h |

### 12.2 Persistence and degradability

The product contains substances which are not expected to be biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Glyoxal | Readily biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Glyoxal | Not likely to bioaccumulate - Bioconcentration factor (BCF) 2.155 |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Glyoxal | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Glyoxal | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 09-Jul-2018 |
| **Revision date** | 16-Nov-2018 |
| **Version** | 12 |
| **This SDS has been revised in the following section(s)** | 2, 6, No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS**

**information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D247
**Version** 2
**Revision date** 02-Dec-2019
**Supersedes Date:** 17-Dec-2015

# Safety Data Sheet
## Dye D247

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Dye D247
**Product code** D247

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H373 - May cause damage to organs through prolonged or repeated exposure if swallowed

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Ethylene Glycol

Acetic acid

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ethylene Glycol | 203-473-3 | 107-21-1 | 10 < 25 |
| Acetic acid | 200-580-7 | 64-19-7 | 1 - 5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating and toxic gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ethylene Glycol | Not determined | 40ppmSTELvapour<br>104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 39.4 ppm Ceiling<br>100 mg/m³ Ceiling |
| Acetic acid | 15 ppm STEL<br>37 mg/m³ STEL | 15ppmSTEL<br>37mg/m³STEL | 15 ppm STEL<br>37 mg/m³ STEL |

| | | | |
|---|---|---|---|
| | 10 ppm TWA<br>25 mg/m³ TWA | 10ppmTWA<br>25mg/m³TWA | 10 ppm TWA<br>25 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| Acetic acid | 15 ppm STEL<br>37 mg/m³ STEL<br>10 ppm TWA<br>25 mg/m³ TWA | 10 ppm TWA<br>25 mg/m³ TWA<br>15 ppm STEL<br>37 mg/m³ STEL | 10 ppm OEL<br>25 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethylene Glycol | 5 mg/m³ MAC | 125 mg/m³ TWA<br>50.0 ppm TWA<br>100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| Acetic acid | 5 mg/m³ MAC | 25 mg/m³ TWA<br>10 ppm TWA<br>20 mg/m³ TWA<br>5 ppm TWA<br>37 mg/m³ STEL<br>15 ppm STEL<br>20 mg/m³ STEL<br>5 ppm STEL | 15 ppm STEL<br>37 mg/m³ STEL<br>10 ppm TWA<br>25 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| Acetic acid | 10 ppm TWA<br>25 mg/m³ TWA | 10 ppm TWA<br>25 mg/m³ TWA | Skin notation<br>5 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA<br>52 mg/m³ TWA |
| Acetic acid | 10 ppm TWA | 25 mg/m³ TWA<br>35 mg/m³ STEL | 10 ppm TWA<br>25 mg/m³ TWA |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Rubber Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No protective equipment is needed under normal use conditions In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit Respirator with a vapor filter (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Pungent |
| **Color** | Dark Purple |
| **Odor threshold** | No information available |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 3 - 4 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -17 °C / 1.4 °F | |
| **Boiling point/range** | 103 °C / 217.4 °F | |
| **Flash point** | > 93 °C / 199.4 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.02 - 1.06 | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation. Components of the product may be absorbed into the body through the skin.

**Ingestion** May cause damage to organs through prolonged or repeated exposure.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethylene Glycol | = 4700 mg/kg ( Rat ) | = 9530 µL/kg ( Rabbit ) = 10600 mg/kg ( Rat ) | No data available |
| Acetic acid | = 3310 mg/kg ( Rat ) | = 1060 mg/kg ( Rabbit ) | = 11.4 mg/L ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Inhalation. Ingestion. Eye contact. |
| **Routes of entry** | Ingestion. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Category 2. |
| **Target organ effects** | Kidney. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethylene Glycol | = 16000 mg/L LC50 Poecilia reticulata 96 h 40000 - 60000 mg/L LC50 Pimephales promelas 96 h = 40761 mg/L LC50 Oncorhynchus mykiss 96 h = 27540 mg/L LC50 Lepomis macrochirus 96 h 14 - 18 mL/L LC50 Oncorhynchus mykiss 96 h = 41000 mg/L LC50 Oncorhynchus mykiss 96 h | 6500 - 13000 mg/L EC50 Pseudokirchneriella subcapitata 96 h | = 46300 mg/L EC50 Daphnia magna 48 h |
| Acetic acid | = 75 mg/L LC50 Lepomis macrochirus 96 h = 79 mg/L LC50 Pimephales promelas 96 h | 300.82 mg/l EC50 (Algae) = 72h 73,400 µg/l EC50 (Algae - Navicula seminulum) = 96h | = 47 mg/L EC50 Daphnia magna 24 h = 65 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Acetic acid | Readily biodegradable |

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

| Chemical Name | Bioaccumulation |
|---|---|
| Acetic acid | Bioconcentration factor (BCF) : 3.16 Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| Acetic acid | Soluble in water |

**Mobility in soil**
No product level data available. See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Acetic acid | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated

**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ethylene Glycol
Schedule 6
Schedule 5
Acetic acid
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |

| | |
|---|---|
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 17-Dec-2015 |
| **Revision date** | 02-Dec-2019 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 141633
**Version** 5
**Revision date** 25-Apr-2019
**Supersedes Date:** 15-Dec-2017

# Safety Data Sheet
ECF-1868

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ECF-1868
**Product code** 141633

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
May form combustible dust concentrations in air

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-methylpropan-2-ol (impurity) | 200-889-7 | 75-65-0 | 5-<10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically. Keep victim under observation.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Sulphur oxides, Ammonia, Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents Strong acids |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable |
| **Respiratory protection** | No protective equipment is needed under normal use conditions In case of insufficient |

| | |
|---|---|
| | ventilation, wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Remove and wash contaminated clothing before re-use |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 2 - 5 | @ 5 g/l |
| **Melting / freezing point** | > 150 °C / > 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.265 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150 °C / > 302 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | ~ 0 | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

| | |
|---|---|
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
Oxidizing agents may cause exothermic reactions.

### 10.4 Conditions to avoid

Take precautionary measures against static charges. Protect from moisture. Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
~ 0

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 15-Dec-2017 |
| **Revision date** | 25-Apr-2019 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID18940
**Version** 2
**Revision date** 16-Mar-2017
**Supersedes Date:** 12-Feb-2014

# Safety Data Sheet
ECF-2928

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ECF-2928
**Product code** PID18940

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Cleaning compound

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Aspiration toxicity | Category 1 |
| Acute toxicity - Dermal | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H304 - May be fatal if swallowed and enters airways
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P309 + P311 - IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician
P330 - Rinse mouth
P362 - Take off contaminated clothing and wash before reuse

**Contains**
2-butoxyethanol

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics*

D-Glucopyranose, oligomeric, C8-10 glycosides

1-Butoxypropan-2-ol

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

# 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-butoxyethanol | 203-905-0 | 111-76-2 | 10-<30 |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | 926-141-6 | RM1004246 | 10-30 |
| D-Glucopyranose, oligomeric, C8-10 glycosides | 500-220-1 | 68515-73-1 | 10-30 |
| 1-Butoxypropan-2-ol | 225-878-4 | 5131-66-8 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Risk of product entering the lungs on vomiting after ingestion. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.

**Eye Contact** — Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Get immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Prevent the formation of vapors, mists and aerosols. Do not breathe vapors or spray mist.

**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m³ and ST. EXP = 10mg/m³.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-butoxyethanol | 25 ppm TWA<br>121 mg/m³ TWA | 50ppmSTEL<br>242mg/m³STEL<br>20ppmTWA<br>96.9mg/m³TWA | Not determined |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| 1-Butoxypropan-2-ol | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-butoxyethanol | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Skin notation | 25 ppm ACL |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| 1-Butoxypropan-2-ol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-butoxyethanol | 5 mg/m³ MAC | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Possibility of significant uptake through the skin*1) |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| 1-Butoxypropan-2-ol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |

| | | | |
|---|---|---|---|
| 2-butoxyethanol | 20 ppm TWA<br>96.7 mg/m³ TWA<br>Skin notation*3) | skin - potential for cutaneous absorption<br>50 ppm TWA<br>240 mg/m³ TWA | 5 mg/m³ MAC |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| 1-Butoxypropan-2-ol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-butoxyethanol | 50 ppm TWA | Not determined | 50 ppm STEL<br>246 mg/m³ STEL<br>Skin*2)<br>20 ppm TWA<br>98 mg/m³ TWA |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| 1-Butoxypropan-2-ol | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Rubber
Break through time >60 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more

information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Characteristic |
| **Color** | Clear - Yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 68 °C / 154 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Emulsifies | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 0.910 g/cm3 @ 20°C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Take precautionary measures against static charges.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system. May cause additional affects as listed under "Ingestion".

**Eye contact** Causes serious eye damage.

**Skin contact** Harmful in contact with skin. Causes skin irritation. Components of the product may be absorbed into the body through the skin. Repeated exposure may cause skin dryness or cracking.

**Ingestion** May be fatal if swallowed and enters airways. Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-butoxyethanol | 1200 mg/kg (Guinea pigs) | > 2000 mg/kg (Rat) | 400 ppm ( Rabbit) |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | > 5000 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | > 5.2 mg/L (Rat) 4 h |
| D-Glucopyranose, oligomeric, C8-10 glycosides | > 2000 mg/kg bw (Rat) ECHA Data | > 2000 mg/kg (Rabbit) ECHA Data | No data available |
| 1-Butoxypropan-2-ol | = 1900 mg/kg ( Rat ) = 5660 µL/kg ( Rat ) | = 3100 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Ingestion. Eye contact. Skin contact.

| | |
|---|---|
| **Routes of entry** | Ingestion. Eye contact. Skin contact. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | May be fatal if swallowed and enters airways. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-butoxyethanol | = 2950 mg/L LC50 Lepomis macrochirus 96 h = 1490 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 1698 - 1940 mg/L (LC50; Daphnia magna)<br>= 1720 mg/L (EC50; water flea) |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l<br>Exposure time: 96 h<br>Test Type: semi-static test<br>Test substance: WAF<br>Method: OECD Test Guideline 203<br>Remarks: Information given is based on data obtained from similar substances. | EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l<br>Exposure time: 72 h<br>Test Type: static test<br>Test substance: WAF<br>Method: OECD Test Guideline 201<br>Remarks: Information given is based on data obtained from similar substances. | EL50 (Water flea (Daphnia magna)): 1,4 mg/l<br>Exposure time: 48 h<br>Test Type: static test<br>Test substance: WAF<br>Method: OECD Test Guideline 202<br>Remarks: Information given is based on data obtained from similar substances. |
| D-Glucopyranose, oligomeric, C8-10 glycosides | 170 mg/l LC50 Zebra fish | 37 mg/L (= 21 mg a.i./L) EC50 to the freshwater algae Scenedesmus subspicatus 72h | > 100 mg/l EC50 Daphnia magna 48h |
| 1-Butoxypropan-2-ol | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-butoxyethanol | Readily biodegradable |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Inherently biodegradable OECD 301F : 58.6% Duration 28 days |
| D-Glucopyranose, oligomeric, C8-10 glycosides | OECD 301 Readily biodegradable |

| | |
|---|---|
| 1-Butoxypropan-2-ol | Readily biodegradable |

### 12.3 Bioaccumulative potential

No product level data available. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2-butoxyethanol | Not likely to bioaccumulate |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Does not bioaccumulate |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not likely to bioaccumulate |
| 1-Butoxypropan-2-ol | Not likely to bioaccumulate log Kow =1.15 |

### 12.4 Mobility

**Mobility**
emulsifiable. See component information below.

| Chemical Name | Mobility |
|---|---|
| 2-butoxyethanol | Soluble in water |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Insoluble in water |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Partially soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| 2-butoxyethanol | No information available |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |
| D-Glucopyranose, oligomeric, C8-10 glycosides | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused** Dispose of in accordance with local regulations.

**products**

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-butoxyethanol
Schedule 6

**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR002525

**Group number** 6.1E, 6.1D, 6.3A, 8.3A

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

CAS Number 64742-47-8 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 12-Feb-2014 |
| **Revision date** | 16-Mar-2017 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 142822
**Version** 1
**Revision date** 06-Jul-2018
**Supersedes Date:** None

# Safety Data Sheet
## ECF-3998

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ECF-3998
**Product code** 142822
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtrate reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

| | |
|---|---|
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee |

| | |
|---|---|
| | training Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | No information available |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6 - 8 | @ 25% aqueous solution |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 0.35 - 0.65 g/cc | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |

**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Not known.

**10.4 Conditions to avoid**

Avoid dust formation. Suspended dust may present a dust explosion hazard. Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Ingestion. |
| **Routes of entry** | Inhalation. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Revision date** | 06-Jul-2018 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories

National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood Follow general hygiene considerations recognized as common good workplace practices

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 142523
**Version** 1
**Revision date** 15-Feb-2018
**Supersedes Date:** None

# Safety Data Sheet
## EMI-1950

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** EMI-1950
**Product code** 142523
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

Glyoxal

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Contact with eyes may cause irritation

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <5 |
| Glyoxal | 203-474-9 | 107-22-2 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Repeated or prolonged inhalation of crystalline silica dust, exceeding the occupational exposure limits, can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL |

| | | | |
|---|---|---|---|
| | | | 1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits See section 7 for more information

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Light tan - Gray Green |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 9-10 | |
| **pH @ dilution** | | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.3 - 2.6 | 20 °C |
| **Bulk density** | 48-52 lb/ft³ / 769-833 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Not applicable
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |
| Glyoxal | = 200 mg/kg ( Rat ) | = 12700 mg/kg ( Rabbit ) | = 2410 mg/m³, 3-4 hrs |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** This product contains one or more substances which are classified in the EU as carcinogenic, mutagenic and/or reprotoxic.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | No information available | No information available | No information available |
| Glyoxal | = 215 mg/L LC50 Pimephales promelas 96 h 460 - 680 mg/L LC50 Leuciscus idus 96 h | <= 348.59 mg/L EC50 Pseudokirchneriella subcapitata 96 h > 500 mg/L EC50 Desmodesmus subspicatus 96 h > 500 mg/L EC50 Desmodesmus subspicatus 72 h | = 404 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

## 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Revision date** | 15-Feb-2018 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New |

**Classification procedure:**
Classification is based on mixture calculation methods based on component data

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training advice:**
It is a good industrial hygiene practice to minimize skin contact

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID18233
**Version** 3
**Revision date** 17-Apr-2019
**Supersedes Date:** 02-Oct-2018

# Safety Data Sheet
EMI-2755

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** EMI-2755
**Product code** PID18233
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Hydrocarbon.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away

traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from freezing Avoid extreme temperatures Keep away from direct sunlight. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Use protective gloves made of: Nitrile Neoprene<br>Break through time >480 minutes |

| | |
|---|---|
| | Glove thickness 0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Milky |
| **Odor** | Mild |
| **Color** | White |
| **Odor threshold** | No information available |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 5 - 8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 93 °C / 200 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 17.5 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.03 | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from freezing. Avoid extreme temperatures. Keep away from direct sunlight.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Oct-2018 |
| **Revision date** | 17-Apr-2019 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 2, 8, 15, No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D239
**Version** 2
**Revision date** 06-Jun-2018
**Supersedes Date:** 07-Aug-2014

# Safety Data Sheet
## Environmentally Friendly EXTENDER Express D239

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Environmentally Friendly EXTENDER Express D239
**Product code** D239

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry chemical, $CO_2$, water spray or regular foam.

**Extinguishing media which must not be used for safety reasons**
Do not use halon type extinguisher.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Oxides of phosphorus, Carbon oxides (COx), Potassium oxide.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing When using do not eat, drink, smoke, sniff

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from freezing Protect from moisture Keep away from direct sunlight. Incompatible with strong acids and bases Oxidizing agents Heavy metals |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes It is good practice to wear goggles when handling any chemical Tightly fitting safety goggles |
| **Hand protection** | Use protective gloves made of: polyvinyl alcohol or nitrile-butyl rubber gloves<br>Break through time >480 minutes<br>Glove thickness 0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Mild |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.25 - 1.35 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 1000 mPa.s | @ 25 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from freezing. Protect from moisture. Keep away from direct sunlight.

### 10.5 Incompatible materials

Incompatible with strong acids and bases. Oxidizing agents. Heavy metals.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |

| | |
|---|---|
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | No hazard from product as supplied. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by**

**Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 07-Aug-2014 |
| **Revision date** | 06-Jun-2018 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 2, 5, 7, 8, 9, 14, 15, 16<br>No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

**SDS no.** D174
**Version** 7
**Revision date** 28-Mar-2018
**Supersedes Date:** 19-Jan-2016

# Safety Data Sheet
## Expanding Cement Additive D174

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Expanding Cement Additive D174
**Product code** D174

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P362 - Take off contaminated clothing and wash before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium magnesium oxide | 253-425-0 | 37247-91-9 | 90-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture Reacts violently with water Avoid contact with: Strong oxidizing agents Strong acids. Strong bases |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.

**Component Information**

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Tan |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 12.4 | 1385.2 mg/l @ 20°C |
| **Melting / freezing point** | > 450 °C / 842 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |

| | | |
|---|---|---|
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 3.41 | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | Not applicable |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Exothermic reaction with:. Acids. Water.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids. Strong bases. Water.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | May cause irritation of respiratory tract. |
| **Eye contact** | Causes serious eye damage. |
| **Skin contact** | Causes skin irritation. |
| **Ingestion** | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Skin contact. Eye contact. Inhalation. |
| **Routes of entry** | Skin contact. Eye contact. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Category 3 |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Target organ effects** | Respiratory system. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

**UN No. (ICAO/ANAC)** UN1910

**14.2. UN proper shipping name**
Calcium Oxide (regulated only if transported by aircraft)

**14.3 Hazard class(es)**
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** 8

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** III


**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No Poison Schedule number allocated
**New Zealand hazard classification** Classified

**HSNO approval no.** HSR002544

**Group number** 6.3A, 8.3A

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 19-Jan-2016 |
| **Revision date** | 28-Mar-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate**

**agreement between the parties.**

**SDS no.** PID11950
**Version** 5
**Revision date** 31-May-2019
**Supersedes Date:** 02-Aug-2015

# Safety Data Sheet
## FILTER FLOC*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FILTER FLOC*
**Product code** PID11950
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Flocculating agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Ammonia, Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |

| | |
|---|---|
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7.4 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 93 °C / > 200 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.011 | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 43 - 53 cP | @ 48.8 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **LD50 Oral** | > 2000 mg/kg (rat) (MIXTURE) |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae. IC 50, 72 Hrs, mg/l: >100.

**Toxicity to fish**
This product is not considered toxic to fish. LC 50, 96 Hrs, mg/l >100.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates. EC 50, 48 Hrs, mg/l: >100.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Aug-2015 |
| **Revision date** | 31-May-2019 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

# Safety Data Sheet
## Fine Cement D189A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Fine Cement D189A
**Product code** D189A

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Sub-Category 1B |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary statements**
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Portland Cement Clinker

Blast furnace slag

Flue dust from production of clinker

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Portland Cement Clinker | 266-043-4 | 65997-15-1 | 60-100 |

| | | | |
|---|---|---|---|
| Blast furnace slag | 266-002-0 | 65996-69-2 | 60-100 |
| Flue dust from production of clinker | 270-659-9 | 68475-76-3 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with the skin and the eyes. Avoid dust formation. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Oxidizing agents Strong acids Aluminum Hydrofluoric acid (HF)

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| **Chemical Name** | **Arabic** | **Australia** | **Egypt** |
|---|---|---|---|
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | Not determined |
| Blast furnace slag | Not determined | Not determined | Not determined |
| Flue dust from production of clinker | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | 4 mg/m³ OEL<br>1 mg/m³ OEL |
| Blast furnace slag | Not determined | Not determined | Not determined |
| Flue dust from production of clinker | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Portland Cement Clinker | Not determined | 10.0 mg/m³ TWA<br>5.0 mg/m³ TWA | 10 mg/m³ TWA |
| Blast furnace slag | Not determined | Not determined | Not determined |
| Flue dust from production of clinker | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Portland Cement Clinker | 10 mg/m³ TWA | Not determined | Not determined |
| Blast furnace slag | Not determined | Not determined | Not determined |
| Flue dust from production of clinker | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Portland Cement Clinker | Not determined | Not determined | Not determined |
| Blast furnace slag | Not determined | Not determined | Not determined |
| Flue dust from production of clinker | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**
**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles
**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious

| | |
|---|---|
| | gloves made of: PVC disposable gloves Nitrile Neoprene Rubber gloves Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Dark gray |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 11.0 - 13.5 | |
| **Melting / freezing point** | > 1250 °C / 2282 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 2.75 - 3.20 g/cm$^3$ | |
| **Bulk density** | 0.9 - 1.5 g/cm$^3$ | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | Not applicable | |
| **Oxidizing properties** | Not applicable | |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Oxidizing agents. Hydrofluoric acid (HF). Strong acids. Aluminum.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Contact with moist mucous membranes of the respiratory system can cause caustic condition resulting in burns.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** Ingestion may cause irritation to mucous membranes.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Portland Cement Clinker | No data available | No data available | No data available |
| Blast furnace slag | No data available | No data available | No data available |

| | | | |
|---|---|---|---|
| Flue dust from production of clinker | No data available | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled. Risk of cancer depends on duration and level of exposure.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Inhalation. Eye contact.

**Routes of entry** Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Category 3

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Portland Cement Clinker | No information available | No information available | No information available |
| Blast furnace slag | No information available | No information available | No information available |
| Flue dust from production of clinker | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Portland Cement Clinker | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Portland Cement Clinker | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

### 14.5 Environmental hazard
No

**14.6 Special precautions**
None

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Portland Cement Clinker
Schedule 4
Schedule 6
Schedule 5
Blast furnace slag
Schedule 4
Schedule 6
Schedule 5
Flue dust from production of clinker
Schedule 4
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 31-Jul-2019 |
| **Revision date** | 28-Apr-2021 |

| | |
|---|---|
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 3, 9, 15, No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 * |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D059
**Version** 2
**Revision date** 15-Mar-2016
**Supersedes date** 05-May-2011

# Safety Data Sheet
## FLAC* D59 FLUID-LOSS ADDITIVE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLAC* D59 FLUID-LOSS ADDITIVE
**Product code** D059

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material, Water spray mist or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment. See also section 8. Use personal protective equipment.

Material can create slippery conditions.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal. After cleaning, flush away traces with water. Material becomes slippery when wet. Use caution if wet.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Ensure all equipment is electrically grounded before beginning transfer operations. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded Avoid heat, flames and other sources of ignition. Keep away from direct sunlight. Avoid handling causing generation of dust. Store away from incompatibles, Acids Bases Strong oxidizing agents Hydrofluoric acid (HF) |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Control the source

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use tight-fitting safety goggles, if not available use safety glasses with side-shields |
| **Hand protection** | Repeated or prolonged contact Use protective gloves made of: Neoprene gloves PVC disposable gloves Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) |
| **Skin and body protection** | Clean, body-covering clothing Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before breaks and immediately after handling the product

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules Powder |
| **Odor** | No information available |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 6 - 8.5 | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | 30 g/m³ | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 460 °C / 860 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.38 g/cm3 |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Heat, flames and sparks. Avoid handling causing generation of dust. Keep away from direct sunlight. Take precautionary measures against static charges.

### 10.5 Incompatible materials

Acids. Bases. Hydrofluoric acid (HF). Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Target organ effects** | No information available. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

The product is expected to be slowly biodegradable.

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes date** | 05-May-2011 |
| **Revision date** | 15-Mar-2016 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | Updated according to GHS/CLP. This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS**

**information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** SYS00014
**Version** 2
**Revision date** 21-Jun-2017
**Supersedes Date:** 04-Aug-2016

# Safety Data Sheet
## FLOPRO NT* PREMIX

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLOPRO NT* PREMIX
**Product code** SYS00014
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Pre-mix for Drilling Fluid.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

**Contains**
Calcium carbonate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 10-30 |

**Comments**
Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness >=0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | No information available |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 9.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |

| | |
|---|---|
| **Vapor density** | No information available |
| **Specific gravity** | No information available |
| **Bulk density** | No information available |
| **Relative density** | 1.24 sg |
| **Water solubility** | Miscible with water. |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium carbonate | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |

### 12.3 Bioaccumulative potential

No product level data available. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |

| | |
|---|---|
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 04-Aug-2016 |
| **Revision date** | 21-Jun-2017 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 1, 8, 9, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID3327
**Version** 3
**Revision date** 21-Jun-2017
**Supersedes Date:** 31-Aug-2016

# Safety Data Sheet
## FLOPRO NT*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLOPRO NT*
**Product code** PID3327

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Sodium chloride

Potassium chloride

Calcium carbonate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium chloride | 231-598-3 | 7647-14-5 | 0-30 |
| Potassium chloride | 231-211-8 | 7447-40-7 | 0-10 |
| Calcium carbonate | 207-439-9 | 471-34-1 | 5-60 |

**Comments**
Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium chloride | Not determined | Not determined | Not determined |
| Potassium chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium chloride | Not determined | Not determined | Not determined |
| Potassium chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Potassium chloride | 5 mg/m³ MAC | Not determined | Not determined |

| | | | |
|---|---|---|---|
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Potassium chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Calcium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium chloride | Not determined | Not determined | Not determined |
| Potassium chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Mild |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 5.0 - 9.5 | Cons. solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.0 - 2.2 sg | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Potassium chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |
| Potassium chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |
| Calcium carbonate | No information available | No information available | No information available |

## 12.2 Persistence and degradability

No product level data available. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |

## 12.3 Bioaccumulative potential

No product level data available. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium chloride
Schedule 4

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 31-Aug-2016 |
| **Revision date** | 21-Jun-2017 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 1, 8, 9, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID620
**Version** 6
**Revision date** 28-Apr-2017
**Supersedes Date:** 24-Sep-2014

# Safety Data Sheet
## FLO-TROL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLO-TROL*
**Product code** PID620

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtration-control.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away

traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, |

respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 7.0 - 8.0 | @1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | |
| **Bulk density** | 30-37 lb/ft3 | |
| **Relative density** | No information available | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 380 °C / 716 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** None known.

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

| | |
|---|---|
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 24-Sep-2014 |
| **Revision date** | 28-Apr-2017 |
| **Version** | 6 |

**This SDS has been revised in the following section(s)** All sections No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID625
**Version** 4
**Revision date** 03-Jun-2019
**Supersedes Date:** 31-Mar-2015

# Safety Data Sheet
## FLO-VIS* L

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLO-VIS* L
**Product code** PID625
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
(2-methoxymethylethoxy)propanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | 252-104-2 | 34590-94-8 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes extremely slippery when wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | 150 ppm STEL<br>909 mg/m³ STEL<br>100 ppm TWA<br>606 mg/m³ TWA | 50ppmTWA<br>308mg/m³TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| (2-methoxymethylethoxy)propanol | Not determined | 100 ppm TWA<br>606 mg/m³ TWA<br>Skin notation<br>150 ppm STEL<br>909 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| (2-methoxymethylethoxy)propanol | Not determined | Not determined | 150 ppm STEL<br>909 mg/m³ STEL<br>100 ppm TWA<br>606 mg/m³ TWA<br>Possibility of significant uptake through the skin |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |

| | | | |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | 100 ppm TWA<br>606 mg/m³ TWA<br>Skin notation | skin - potential for cutaneous absorption<br>100 ppm TWA<br>600 mg/m³ TWA | Not determined |

| Chemical Name | Thailand | Vietnam | Turkey |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | Not determined | Not determined | Skin<br>50 ppm TWA<br>308 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Transparent |
| **Odor** | Slight Ether |
| **Color** | Tan - Cream |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 149 °C / > 300 °F | |
| **Flash point** | 99 °C / 211 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 0.4 | @ 25 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition.

**10.5 Incompatible materials**

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | = 5.35 g/kg ( Rat ) | = 9500 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact.

**Routes of entry** Inhalation. Skin absorption.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| (2-methoxymethylethoxy)propanol | > 10000 mg/L LC50 Pimephales promelas 96 h | No information available | = 1919 mg/L LC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| (2-methoxymethylethoxy)propanol | Inherently biodegradable |

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 31-Mar-2015 |
| **Revision date** | 03-Jun-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID627
**Version** 7
**Revision date** 12-Mar-2021
**Supersedes Date:** 02-May-2017

# Safety Data Sheet
## FLO-VIS* PLUS

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FLO-VIS* PLUS
**Product code** PID627

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Overseas Limited
Sonils Base Luanda Port
6460, Luanda Angola

+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains**
Glyoxal

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Glyoxal | 203-474-9 | 107-22-2 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Glyoxal | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Glyoxal | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Butyl Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | White - Tan |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 7 | @ 1% sol. |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |

| | |
|---|---|
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Protect from moisture. Take precautionary measures against static charges.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Glyoxal | = 200 mg/kg ( Rat ) | = 12700 mg/kg ( Rabbit ) | = 2410 mg/m³, 3-4 hrs |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** Contains an known or suspected mutagen.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Glyoxal | 460 - 680 mg/L LC50 Leuciscus idus 96 h = 215 mg/L LC50 Pimephales promelas 96 h | <= 348.59 mg/L EC50 Pseudokirchneriella subcapitata 96 h > 500 mg/L EC50 Desmodesmus subspicatus 96 h > 500 mg/L EC50 Desmodesmus subspicatus 72 h | = 404 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

The product contains substances which are not expected to be biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Glyoxal | Readily biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Glyoxal | Not likely to bioaccumulate - Bioconcentration factor (BCF) 2.155 |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Glyoxal | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Glyoxal | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-May-2017 |
| **Revision date** | 12-Mar-2021 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | 1, 4, 6, 7, 8, 10, 12, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D139
**Version** 3
**Revision date** 05-Sep-2017
**Supersedes date** 01-Jun-2011

# Safety Data Sheet
## Foamed Cement Stabilizer D139

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Foamed Cement Stabilizer D139
**Product code** D139
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Specific target organ toxicity - Single exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Flammable Liquids | Category 3 |

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H302 - Harmful if swallowed
H371 - May cause damage to organs
H226 - Flammable liquid and vapor

**Precautionary statements**
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P309 + P311 - IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use dry sodium carbonate to extinguish
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing and eye/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P330 - Rinse mouth
P403 + P235 - Store in a well-ventilated place. Keep cool

**Contains**
Methanol

2-(2-Butoxyethoxy)ethanol

Ethylene Glycol

**2.3 Other hazards**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Methanol | 200-659-6 | 67-56-1 | 1-5 |
| 2-(2-Butoxyethoxy)ethanol | 203-961-6 | 112-34-5 | 0.1-1.0 |
| Ethylene Glycol | 203-473-3 | 107-21-1 | 0.1-1.0 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get immediate medical attention.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin contact** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists.

### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Ethanol may be administered in an IV solution to counteract the adverse effects of methanol ingestion. Fomepizole (Antizol) may also be used for treatment of methanol poisoning.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
FLAMMABLE.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Sulphur oxides, Ammonia, Harmful organic

chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG**
•3Y

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep away from sources of ignition - No smoking. Evacuate and ventilate the area. For personal protection see section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage. Do not allow spilled material to enter sewers, storm drains or surface waters.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). After cleaning, flush away traces with water. Ground and bond containers when transferring material. Take precautionary measures against static discharges.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Keep away from heat, sparks and open flame. No smoking. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Wash thoroughly after handling.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing. When using do not eat, drink, smoke, sniff

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Keep away from heat, sparks, and flame. Ensure adequate ventilation. |
| **Storage precautions** | Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Follow safe warehousing practices regarding |

palletizing, banding, shrink-wrapping and/or stacking.

**Storage class** Flammable liquid storage.

**Packaging materials** Steel or high density polyethylene (HDPE) container approved for flammables

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Methanol | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA | 250ppmSTEL<br>328mg/m³STEL<br>200ppmTWA<br>262mg/m³TWA | 250 ppm STEL<br>325 mg/m³ STEL<br>Skin designation<br>200 ppm TWA<br>260 mg/m³ TWA |
| 2-(2-Butoxyethoxy)ethanol | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 40ppmSTELvapour<br>104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 39.4 ppm Ceiling<br>100 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Methanol | 250 ppm STEL; 310 mg/m³ STEL<br>200 ppm TWA<br>260 mg/m³ TWA | 200 ppm TWA<br>250 ppm STEL | May cause substantial skin absorption<br>200 ppm ACL<br>200 ppm OEL<br>260 mg/m³ OEL |
| 2-(2-Butoxyethoxy)ethanol | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Methanol | 5 mg/m³ MAC | Skin notation<br>325 mg/m³ STEL<br>250 ppm STEL | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA<br>Possibility of significant uptake through the skin |
| 2-(2-Butoxyethoxy)ethanol | Not determined | Not determined | Not determined |
| Ethylene Glycol | 5 mg/m³ MAC | 100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Methanol | 200 ppm TWA<br>262 mg/m³ TWA<br>Skin notation | 200 ppm TWA<br>260 mg/m³ TWA | 15 mg/m³ STEL<br>Skin notation<br>5 mg/m³ TWA<br>Skin |
| 2-(2-Butoxyethoxy)ethanol | Not determined | Not determined | 10 mg/m³ MAC |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Methanol | Not determined | 50 mg/m³ TWA<br>100 mg/m³ STEL | Skin<br>200 ppm TWA<br>260 mg/m³ TWA |
| 2-(2-Butoxyethoxy)ethanol | Not determined | Not determined | 15 ppm STEL<br>101.2 mg/m³ STEL<br>10 ppm TWA<br>67.5 mg/m³ TWA |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA |

| | | | |
|---|---|---|---|
| | | | 52 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 resistant to the solvent(s) in use<br>Repeated or prolonged contact Nitrile or Neoprene™<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No special protective equipment required. In case of insufficient ventilation: Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing and gloves Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Keep airborne concentrations below exposure limits Avoid contact with skin, eyes and clothing |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Transparent |
| **Odor** | Sweet Alcohol |
| **Color** | Clear Pale yellow |
| **Odor threshold** | No information available |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7.6 | |
| **pH @ dilution** | | |
| **Melting / freezing point** | < -29 °C / -20 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | 54 °C / 129 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |

| | | |
|---|---|---|
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 8.1 kPa | @ 38 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.1 | @ 20°C. |
| **Water solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | ~5 |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Flammable liquid and vapor.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid contact with heat, sparks, open flame, and static discharge.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Vapors inhaled in high concentration have a narcotic effect on the central nervous system.

**Eye contact** Contact with eyes may cause irritation. May cause pain, redness, discomfort.

**Skin contact** Components of the product may be absorbed into the body through the skin. Repeated exposure may cause skin dryness or cracking.

**Ingestion** Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause adverse cardiac effects, blood disturbances, and metabolic acidosis. Intoxication can lead to a coma with metabolic acidosis that may be fatal.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Methanol | = 2528 mg/kg ( Rat ) | = 15800 mg/kg ( Rabbit ) | = 128.2 mg/L ( Rat ) 4 h |
| 2-(2-Butoxyethoxy)ethanol | = 5660 mg/kg ( Rat ) | = 2700 mg/kg ( Rabbit ) | No data available |
| Ethylene Glycol | = 7712 mg/kg ( Rat ) | > 3500 mg/kg (Mouse) | > 2.5 mg/l (Rat) 6 hour |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Ingestion. Skin contact. Eye contact.

**Routes of entry** Skin absorption. Eye contact. Ingestion. Inhalation.

**Specific target organ toxicity - Single exposure** Category 2

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Optic nerve (nervus opticus). Central nervous system.

**Aspiration hazard** Not classified.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Methanol | = 15400 mg/L (LC50; Lepomis macrochirus) | =22000 mg/l 96 h | >10000 mg/l 48 h |
| 2-(2-Butoxyethoxy)ethanol | = 1300 mg/L LC50 Lepomis macrochirus 96 h | > 100 mg/L EC50 Desmodesmus subspicatus 96 h | = 2850 mg/L EC50 Daphnia magna 24 h > 100 mg/L EC50 Daphnia magna 48 h |
| Ethylene Glycol | 40000 - 60000 mg/L LC50 (Pimephales promelas) = 96 h<br><br>40761 mg/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>27540 mg/L LC50 (Lepomis macrochirus) = 96 h<br><br>14 - 18 mL/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>16000 mg/L LC50 (Poecilia reticulata) = 96 h<br><br>41000 mg/L LC50 (Oncorhynchus mykiss) = 96 h | 6500 - 13000 mg/L EC50 (Pseudokirchneriella subcapitata) = 96 h | 46300 mg/L EC50 (Daphnia magna) = 48 h |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Methanol | Readily biodegradable |
| 2-(2-Butoxyethoxy)ethanol | Readily biodegradable |
| Ethylene Glycol | Readily biodegradable |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Methanol | Does not bioaccumulate |
| 2-(2-Butoxyethoxy)ethanol | Not likely to bioaccumulate |
| Ethylene Glycol | log Pow -1.36(Calculated) Not likely to bioaccumulate |

## 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

| Chemical Name | Mobility |
|---|---|

| | |
|---|---|
| Methanol | Easily soluble |
| 2-(2-Butoxyethoxy)ethanol | Completely soluble |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Methanol | Adsorbs on soil Test Koc: 1 Notes: Calculated data (in silico) |
| 2-(2-Butoxyethoxy)ethanol | Henry's Law Constant H = 15.2E-9 atm.m3/mol at 25C (estimated) |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues / unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal. Empty containers may contain flammable or explosive vapors. Dispose of in accordance with local regulations.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN1993
**UN No. (IMDG/ANTAQ)** UN1993
**UN No. (ICAO/ANAC)** UN1993

### 14.2. UN proper shipping name
FLAMMABLE LIQUID, N.O.S. (contains methanol),

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** 3
**IMDG/ANTAQ Hazard class** 3
**ICAO/ANAC Hazard class/division** 3

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** III
**IMDG/ANTAQ Packing group** III
**ICAO/ANAC Packing group** III


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 30 |
| **EmS (IMDG)** | F-E, S-E |
| **Emergency Action Code (EAC)** | 3Y |
| **Tunnel restriction code** | (D/E) |
| **Hazchem code ADG** | •3Y |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Methanol
Schedule 6
Schedule 5
2-(2-Butoxyethoxy)ethanol
Schedule 5
Ethylene Glycol
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes date** | 01-Jun-2011 |
| **Revision date** | 05-Sep-2017 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | This SDS has been made in a new database and therefore a new layout. There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID16796
**Version** 3
**Revision date** 08-Jan-2019
**Supersedes Date:** 02-Feb-2015

# Safety Data Sheet
## FORM-A-BLOK*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FORM-A-BLOK*
**Product code** PID16796

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd / ALPINE
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Wollastonite (Ca(SiO3))

Cellulose

Kaolin

Polyvinyl alcohol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Wollastonite (Ca(SiO3)) | 237-772-5 | 13983-17-0 | 30-60 |
| Cellulose | 232-674-9 | 9004-34-6 | 10-30 |
| Kaolin | 310-194-1 | 1332-58-7 | 5-10 |
| Polyvinyl alcohol | polymer | 9002-89-5 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

| | |
|---|---|
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Wollastonite (Ca(SiO3)) | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Cellulose | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Kaolin | 75 ppm STEL<br>356 mg/m³ STEL<br>50 ppm TWA<br>238 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Polyvinyl alcohol | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Wollastonite (Ca(SiO3)) | Not determined | Not determined | Not determined |
| Cellulose | Not determined | 10 mg/m³ TWA | Not determined |
| Kaolin | Not determined | 2 mg/m³ TWA | Not determined |
| Polyvinyl alcohol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Wollastonite (Ca(SiO3)) | Not determined | Not determined | Not determined |
| Cellulose | 2 mg/m³ MAC | Not determined | 10 mg/m³ TWA |
| Kaolin | Not determined | Not determined | 10 mg/m³ TWA<br>2 mg/m³ TWA |
| Polyvinyl alcohol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Wollastonite (Ca(SiO3)) | Not determined | Not determined | Not determined |
| Cellulose | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Kaolin | 2 mg/m³ TWA | Not determined | Not determined |
| Polyvinyl alcohol | Not determined | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Wollastonite (Ca(SiO3)) | Not determined | Not determined | Not determined |
| Cellulose | Not determined | 10 mg/m³ TWA<br>5 mg/m³ TWA<br>20 mg/m³ STEL | Not determined |
| Kaolin | Not determined | Not determined | Not determined |
| Polyvinyl alcohol | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.98 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** No information available

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

| | |
|---|---|
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Wollastonite (Ca(SiO3)) | No data available | No data available | No data available |

| | | | |
|---|---|---|---|
| Cellulose | > 5 g/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |
| Kaolin | No data available | No data available | No data available |
| Polyvinyl alcohol | = 23854 mg/kg ( Rat ) > 20 g/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Wollastonite (Ca(SiO3)) | No information available | No information available | No information available |
| Cellulose | No information available | No information available | No information available |
| Kaolin | No information available | No information available | No information available |
| Polyvinyl alcohol | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Feb-2015 |
| **Revision date** | 08-Jan-2019 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID20006
**Version** 2
**Revision date** 08-Jan-2019
**Supersedes Date:** 08-Dec-2015

# Safety Data Sheet
## FORM-A-BLOK* AS

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FORM-A-BLOK* AS
**Product code** PID20006

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Magnesium oxide, Sulphur oxides, Silicon oxide.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid dust formation. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning,

flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong acids Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 |

(European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid powder |
| **Appearance** | Opaque |
| **Odor** | Slight Aromatic |
| **Color** | Gray - White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.5 - 2.6 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available

| | |
|---|---|
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Not known.

### 10.4 Conditions to avoid

Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong acids. Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 08-Dec-2015 |
| **Revision date** | 08-Jan-2019 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID646
**Version** 4
**Revision date** 27-Feb-2019
**Supersedes Date:** 23-Dec-2014

# Safety Data Sheet
## FORM-A-PLUG* ACC

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FORM-A-PLUG* ACC
**Product code** PID646

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Magnesium oxide

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Magnesium oxide | 215-171-9 | 1309-48-4 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
The product reacts with water and will generate heat.

**Hazardous combustion products**
Fire or high temperatures create: Magnesium oxide, Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Reacts with water.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with water and moist air - product is hygroscopic. Reacts with water Avoid contact with: Acids Oxidizing agents Interhalogens. Phosphorus pentachloride

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Magnesium oxide | 10 mg/m³ TWA | 10mg/m³TWAfume | 10 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Magnesium oxide | Not determined | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Magnesium oxide | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Magnesium oxide | 10 mg/m³ TWA | 15 mg/m³ TWA | 4 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Magnesium oxide | Not determined | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may

be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Neoprene Nitrile PVC Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 10.5 | @ 1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.0 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |

| | |
|---|---|
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | Not determined |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Avoid contact with water and moist air - product is hygroscopic.

**10.5 Incompatible materials**

Water. Acids. Oxidizing agents. Interhalogens. Phosphorus pentachloride.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

**Unknown acute toxicity** Not applicable.

| | |
|---|---|
| **LD50 Oral** | 4287 mg/kg (rat) estimated |
| **LD50 Dermal** | 14290 mg/kg (rat) estimated |
| **LC50 Inhalation** | 25110 mg/l (mist) (dust) mg/m³ estimated |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Magnesium oxide | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Magnesium oxide | No information available | No information available | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Magnesium oxide | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Magnesium oxide | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Slightly soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Magnesium oxide | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Magnesium oxide | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |

| | |
|---|---|
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 23-Dec-2014 |
| **Revision date** | 27-Feb-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID650
**Version** 3
**Revision date** 03-Jun-2019
**Supersedes Date:** 01-Apr-2015

# Safety Data Sheet
## FORM-A-SET* RET

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FORM-A-SET* RET
**Product code** PID650
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |

| | |
|---|---|
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 6.95 - 7.05 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 105 °C / 221 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.31 - 1.34 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 01-Apr-2015 |
| **Revision date** | 03-Jun-2019 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID20057
**Version** 2
**Revision date** 30-Nov-2020
**Supersedes Date:** 09-Mar-2016

# Safety Data Sheet
## FybeCarb*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** FybeCarb*
**Product code** PID20057
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Calcium carbonate

Cellulose

Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 60-100 |
| Cellulose | 232-674-9 | 9004-34-6 | 1-5 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth

to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Silicon oxide.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe dust. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture
Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium carbonate | Not determined | 10mg/m$^3$TWAinhalable dust | Not determined |
| Cellulose | 10 mg/m$^3$ TWA | 10mg/m$^3$TWAinhalable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m$^3$ TWA | 0.1mg/m$^3$TWArespirable dust | Not determined |

| Chemical Name | India | Indonesian | Japan |
|---|---|---|---|
| Calcium carbonate | Not determined | Not determined | Not determined |
| Cellulose | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Cellulose | 2 mg/m³ MAC | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Cellulose | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Cellulose | Not determined | 10 mg/m³ TWA<br>5 mg/m³ TWA<br>20 mg/m³ STEL | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear gloves according to EN 374 to protect against skin effects from powders
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

**Respiratory protection**
No personal respiratory protective equipment normally required Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more

information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules - Fibers |
| **Odor** | Odorless |
| **Color** | White - Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.55 - 2.70 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Not known.

### 10.4 Conditions to avoid

Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust contact with the eyes can lead to mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Cellulose | > 5 g/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

| | |
|---|---|
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium carbonate | No information available | No information available | No information available |
| Cellulose | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam

**Supersedes Date:** 09-Mar-2016

**Revision date** 30-Nov-2020

| | |
|---|---|
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D620
**Version** 3
**Revision date** 29-Sep-2020
**Supersedes Date:** 26-Nov-2019

# Safety Data Sheet
## GASBLOK* Gas Migration Control Additive D620

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GASBLOK* Gas Migration Control Additive D620
**Product code** D620

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin sensitization | Category 1A |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H317 - May cause an allergic skin reaction

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
Propane-1,2-diol

2-methyl-2h-isothiazol-3-one

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Propane-1,2-diol | 200-338-0 | 57-55-6 | 1-5 |
| 2-methyl-2h-isothiazol-3-one | 220-239-6 | 2682-20-4 | >0.0015 - <0.01 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

| | |
|---|---|
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use water spray, fog, Carbon dioxide ($CO_2$), foam or dry chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep at (23°F - 122°F) -5°C - 50°C Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents Strong acids Strong bases

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Propane-1,2-diol | Not determined | 150ppmTWAtotal vapour and | Not determined |

| | | | |
|---|---|---|---|
| | | particulates 474mg/m³TWAtotal vapour and particulates 10mg/m³TWAparticulates only | |
| 2-methyl-2h-isothiazol-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Propane-1,2-diol | Not determined | Not determined | Not determined |
| 2-methyl-2h-isothiazol-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Propane-1,2-diol | 7 mg/m³ MAC | Not determined | 150 ppm TWA<br>474 mg/m³ TWA<br>10 mg/m³ TWA |
| 2-methyl-2h-isothiazol-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Propane-1,2-diol | Not determined | Not determined | 7 mg/m³ MAC |
| 2-methyl-2h-isothiazol-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Propane-1,2-diol | Not determined | Not determined | Not determined |
| 2-methyl-2h-isothiazol-3-one | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Neoprene Rubber Nitrile
Break through time >480 minutes
Glove thickness >0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Opaque |
| **Odor** | Characteristic |
| **Color** | Milky white |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 8.2 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 98 °C / 208 °F | |
| **Flash point** | > 98 °C / > 208 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 23.28 hPa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.03 | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 15.7 mPa s | @ 23 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep at (23°F - 122°F) -5°C - 50°C. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** May cause an allergic skin reaction.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Propane-1,2-diol | = 20 g/kg ( Rat ) | = 20800 mg/kg ( Rabbit ) | No data available |
| 2-methyl-2h-isothiazol-3-one | 232 - 249 mg/kg ( Rat ) = 120 mg/kg ( Rat ) | = 200 mg/kg ( Rabbit ) | = 0.11 mg/L ( Rat ) 4 h |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Inhalation.

**Routes of entry** Skin contact. Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Propane-1,2-diol | = 710 mg/L LC50 Pimephales promelas 96 h = 51400 mg/L LC50 Pimephales promelas 96 h 41 - 47 mL/L LC50 Oncorhynchus mykiss 96 h = 51600 mg/L LC50 Oncorhynchus mykiss 96 h | = 19000 mg/L EC50 Pseudokirchneriella subcapitata 96 h | > 10000 mg/L EC50 Daphnia magna 24 h > 1000 mg/L EC50 Daphnia magna 48 h |
| 2-methyl-2h-isothiazol-3-one | No information available | No information available | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Propane-1,2-diol | Readily biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Propane-1,2-diol | Not likely to bioaccumulate log Kow =-1.07 |

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-methyl-2h-isothiazol-3-one
Schedule 6

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | This product contains chemical(s) which is/are not listed on DSL but is/are listed on the NDSL. |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 26-Nov-2019 |
| **Revision date** | 29-Sep-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D500
**Version** 3
**Revision date** 18-Jun-2021
**Supersedes Date:** 26-Jul-2017

# Safety Data Sheet
## GASBLOK* LT D500

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GASBLOK* LT D500
**Product code** D500

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Gas control agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin sensitization | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H317 - May cause an allergic skin reaction

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P272 - Contaminated work clothing should not be allowed out of the workplace
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol

Methanol (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

Prevent the formation of aerosols.

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | 225-208-0 | 4719-04-4 | 0.1-<1 |
| Methanol (impurity) | 200-659-6 | 67-56-1 | 0.1-<1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention. |
| **Eye Contact** | Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. If spilled, take caution, as material can cause surfaces to become very slippery. Persons susceptible to allergic reactions should not handle this product. Prevent the formation of vapors, mists and aerosols.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Protect from freezing Keep at 41 - 131°F / 5 - 55°C |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol (impurity) | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA | 250ppmSTEL<br>328mg/m³STEL<br>200ppmTWA<br>262mg/m³TWA | 250 ppm STEL<br>325 mg/m³ STEL<br>Skin designation<br>200 ppm TWA<br>260 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Group 1 skin sensitizer |
| Methanol (impurity) | 250 ppm STEL<br>310 mg/m³ STEL<br>200 ppm TWA<br>260 mg/m³ TWA | 200 ppm TWA<br>250 ppm STEL | May cause substantial skin absorption<br>200 ppm ACL<br>200 ppm OEL<br>260 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol (impurity) | 5 mg/m³ MAC | 260 mg/m³ TWA<br>200 ppm TWA<br>Skin notation<br>325 mg/m³ STEL<br>250 ppm STEL | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA<br>Possibility of significant uptake through the skin |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol (impurity) | 200 ppm TWA<br>262 mg/m³ TWA<br>Skin notation | 200 ppm TWA<br>260 mg/m³ TWA | 15 mg/m³ STEL<br>Skin notation<br>5 mg/m³ TWA<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol (impurity) | Not determined | 50 mg/m³ TWA<br>100 mg/m³ STEL | Skin<br>200 ppm TWA<br>260 mg/m³ TWA |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment

**Personal protective equipment**

**Eye protection** Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Impervious gloves made of: Nitrile Neoprene Butyl rubber
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. If there are conditions in which this triazine containing product produces a vapor, a chemical

| | |
|---|---|
| | respirator with A1 + Formaldehyde and P3 particulate pre-filter combination would be required. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Yellow |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7 - 9.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -5 °C / 23 °F | |
| **Boiling point/range** | > 100 °C / 212 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | 2.3 kPa | |
| **Relative Vapor Density** | >1 (air = 1) | |
| **Specific gravity** | 1 | @ 20 °C |
| **Bulk density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | <= 2000 mPa s | @ 23 °C |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |

**Molecular weight** No information available
**VOC content(%)** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Protect from freezing. Keep at 41 - 131°F / 5 - 55°C.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** Methanol is more toxic to humans and primates than to most experimental animals, due to differences in how it is metabolized. Non-primates do not appear to experience the acidosis or vision effects observed in humans and primates.

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** May cause an allergic skin reaction.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | 1000 mg/kg (Rat) (BASF AG, 1997) | > 4000 mg/kg (Rat) (BASF AG,1997) | 0.371 mg/L (Aerosol) (Rat) (Triazine Taskforce, 2011) |
| Methanol (impurity) | = 6200 mg/kg ( Rat ) | = 15840 mg/kg ( Rabbit ) = 15800 mg/kg ( Rabbit ) | = 22500 ppm ( Rat ) 8 h = 64000 ppm ( Rat ) 4 h |

| | |
|---|---|
| **Sensitization** | May cause allergic skin reaction. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Inhalation. Ingestion. |
| **Routes of entry** | Skin absorption. Inhalation. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | > 168 mg/l LC50 96h Sheepshead Minnow (SLB data) | 1.624 mg/l EC50 72h Skeletonema (SLB data) | 99.68 mg/l KC50 48h Acartia (SLB data) |
| Methanol (impurity) | 13500 - 17600 mg/L LC50 Lepomis macrochirus 96 h 18 - 20 mL/L LC50 Oncorhynchus mykiss 96 h 19500 - 20700 mg/L LC50 Oncorhynchus mykiss 96 h > 100 mg/L LC50 Pimephales promelas 96 h = 28200 mg/L LC50 Pimephales promelas 96 h | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

| Chemical Name | Persistence and degradability |
|---|---|

| | |
|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Readily biodegradable |
| Methanol (impurity) | Readily biodegradable |

### 12.3 Bioaccumulative potential

No product level data available.

| Chemical Name | Bioaccumulation |
|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not likely to bioaccumulate log Kow <=3 |
| Methanol (impurity) | Not likely to bioaccumulate Bioconcentration factor (BCF) 1-4.5 |

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Soluble in water |
| Methanol (impurity) | Soluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Study does not need to be conducted because the substance is readily biodegradable |
| Methanol (impurity) | Not expected to adsorb on soil |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Methanol (impurity)
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies Volume restriction. |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 26-Jul-2017 |
| **Revision date** | 18-Jun-2021 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** U028
**Version** 5
**Revision date** 08-Jun-2018
**Supersedes Date:** 03-Jun-2014

# Safety Data Sheet
## Gelling Agent U28 - 30% Active

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Gelling Agent U28 - 30% Active
**Product code** U028

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a gelling agent in oilfield applications

**Uses advised against** No information available

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1A |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves and eye/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Supplementary precautionary statements**
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P363 - Wash contaminated clothing before reuse
P310 - Immediately call a POISON CENTER or doctor/physician
P390 - Absorb spillage to prevent material damage
P220 - Keep/Store away from combustible materials

Sodium hydroxide

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium hydroxide | 215-185-5 | 1310-73-2 | 30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Do NOT induce vomiting. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person. Immediate medical attention is required. |
| **Skin contact** | Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician. |
| **Eye Contact** | Get immediate medical attention. Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas.

**Hazardous combustion products**
Fire or high temperatures create: Heating or fire can release toxic gas.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2R

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Store between 15-25 deg. C (59-77 deg. F) Avoid extreme temperatures Store away from incompatibles, Strong acids Halogenated compounds Metals |
| **Storage class** | Corrosive storage. |
| **Packaging materials** | High density polyethylene (HDPE) drum or can |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.

**, Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium hydroxide | Not determined | 2 mg/m³ Peak | 2 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ TWA | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium hydroxide | 2 mg/m³ TWA | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles / Face-shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear protective nitrile rubber gloves
Break through time >480 minutes
Glove thickness 0.35-0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 13.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 8 °C / 46 °F | |
| **Boiling point/range** | 115 °C / 239 °F | |
| **Flash point** | | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 | @20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 75 mPa s | @ 20 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid extreme temperatures. Store at ambient conditions.

### 10.5 Incompatible materials

Strong acids. Halogenated compounds. Metals. Gives off hydrogen by reaction with metals.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** Causes severe skin burns and eye damage.

**Inhalation** Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate.

**Eye contact** Causes burns. Causes serious eye damage.

**Skin contact** Corrosive. Causes burns.

**Ingestion** Can burn mouth, throat, and stomach.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | No data available | 1350 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium hydroxide | = 45.4 mg/L LC50 Oncorhynchus mykiss 96 h | No information available | No information available |

### 12.2 Persistence and degradability

This product is expected to be readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of as special waste in compliance with local and national regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN1824 |
| **UN No. (IMDG/ANTAQ)** | UN1824 |
| **UN No. (ICAO/ANAC)** | UN1824 |

**14.2. UN proper shipping name**
SODIUM HYDROXIDE SOLUTION,

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | PG II |
| **IMDG/ANTAQ Packing group** | PG II |
| **ICAO/ANAC Packing group** | PG II |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |

| | |
|---|---|
| **Emergency Action Code (EAC)** | 2R |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2R |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium hydroxide
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 03-Jun-2014 |
| **Revision date** | 08-Jun-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | 1, 2, 8, 11, 15, 16<br>No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 0 |
| Physical hazard | 1 |
| PPE | X |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID11404
**Version** 7
**Revision date** 07-Jun-2019
**Supersedes Date:** 06-Jul-2015

# Safety Data Sheet
GELPLEX*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GELPLEX*
**Product code** PID11404

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

Silica - crystalline, tridymite (impurity)

Gypsum (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 5-10 |
| Silica - crystalline, tridymite (impurity) | 239-487-1 | 15468-32-3 | 1-5 |
| Gypsum (impurity) | 603-783-2 | 13397-24-5 | 1-5 |

**3.2 Mixtures**

Not applicable

**Comments**
Naturally occuring mineral.

The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

| | |
|---|---|
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Silica - crystalline, tridymite (impurity) | 0.05 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Gypsum (impurity) | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| Silica - crystalline, tridymite (impurity) | Not determined | 0.05 mg/m³ TWA | 0.03 mg/m³ OEL |
| Gypsum (impurity) | Not determined | 10 mg/m³ TWA | Not determined |

| Chemical Name | Kazakhstan | Kuwait | New Zealand |
|---|---|---|---|
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| Silica - crystalline, tridymite (impurity) | 1 mg/m³ MAC | 0.5 mg/m³ TWA | 0.1 mg/m³ TWA |
| Gypsum (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| Silica - crystalline, tridymite (impurity) | 0.05 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1178 |
| Gypsum (impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |
| Silica - crystalline, tridymite (impurity) | Not determined | Not determined | Not determined |
| Gypsum (impurity) | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

#### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Light tan |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 8-10 | @ 6% slurry |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.3 - 2.65 | |
| **Bulk density** | 769-833 kg/m³ / 48-52 lb/ft³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | No data available | No data available | No data available |
| Silica - crystalline, tridymite (impurity) | No data available | No data available | No data available |
| Gypsum (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |
| Silica - crystalline, tridymite (impurity) | No information available | No information available | No information available |
| Gypsum (impurity) | > 1970 mg/L LC50 Pimephales promelas 96 h = 2980 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 3200 mg/L EC50 Nitscheria linearis 120 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 06-Jul-2015 |
| **Revision date** | 07-Jun-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID729
**Version** 9
**Revision date** 15-Jun-2018
**Supersedes Date:** 07-Jul-2015

# Safety Data Sheet
## GLYDRIL* MC

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GLYDRIL* MC
**Product code** PID729

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale control agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 500-012-0 | 9004-77-7 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl Neoprene Nitrile
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** No information available
**Odor** Mild
**Color** Straw Yellow - Opaque Brown

**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | 7 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -35 °C / -31 °F | |
| **Boiling point/range** | 270 - 355 °C / 518 - 671 °F | |
| **Flash point** | 110 °C / 230 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 0.0033 hPa | @ 25 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.012 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 7.3 cSt | @ 40 °C |
| **Dynamic viscosity** | 9.2 - 9.4 mPa s | @ 20 °C |
| **log Pow** | Not determined | |

**Explosive properties** Not applicable
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition.

**10.5 Incompatible materials**

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 2630 mg/kg (Rat) | 3540 mg/kg bw (Rabbit) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** None known.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | LC50 >1800 mg/l, 96h Scophthalmus maximus OECD 203 | EC50: 2490 mg/l, 72h Selenastrum capricornutum OECD 201 | EC50 >3200 mg/l, 48h Daphnia magna OECD 202 |

## 12.2 Persistence and degradability

Readily biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | OECD 301D 76% |

## 12.3 Bioaccumulative potential

Does not bioaccumulate.

| Chemical Name | Bioaccumulation |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | log Kow 0.44@20°C |

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z. Proper Shipping Name: Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated
**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR003673

**Group number** 8.3A

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 07-Jul-2015

**Revision date** 15-Jun-2018

**Version** 9

**This SDS has been revised in the following section(s)** All sections Product Code change No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories

National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID727
**Version** 5
**Revision date** 09-Feb-2019
**Supersedes Date:** 23-Jul-2018

# Safety Data Sheet
## GLYDRIL* LC

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GLYDRIL* LC
**Product code** PID727

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale control agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Repeated or prolonged contact Neoprene Nitrile rubber PVC<br>Break through time >30 minutes<br>Glove thickness 0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |

| | |
|---|---|
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Characteristic / Slight |
| **Color** | Colorless - Pale yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5-7 | 50 gl/ water |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | 155-165 °C / 311-329 °F | Closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.98 - 1.1 sg | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 15.5 - 21.0 cSt | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **LD50 Oral** | > 2000 mg/kg (rat) By analogy to product with similar composition |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 23-Jul-2018 |
| **Revision date** | 09-Feb-2019 |
| **Version** | 5 |
| **This SDS has been revised in the** | All sections No changes with regard to classification have been made. |

**following section(s)**

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** PID10149
**Version** 7
**Revision date** 13-Jun-2019
**Supersedes Date:** 07-Jul-2015

# Safety Data Sheet
GLYDRIL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** GLYDRIL*
**Product code** PID10149

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Water

Water

Potassium Chloride

Calcium carbonate

Barite

Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy

Starch

Polyanionic cellulose

Xanthan Gum

Crystalline silica (impurity)

Sodium hydroxide

Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine

Sodium carbonate

Glyoxal

2-aminoethanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 0-30 |
| Barite | 236-664-5 | 13462-86-7 | 5-10 |

| | | | |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 500-012-0 | 9004-77-7 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**

None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Water | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| Starch | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| Xanthan Gum | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Sodium hydroxide | Not determined | 2 mg/m³ Peak | 2 mg/m³ Ceiling |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| Sodium carbonate | Not determined | Not determined | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| 2-aminoethanol | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA | 6ppmSTEL<br>15mg/m³STEL<br>3ppmTWA<br>7.5mg/m³TWA | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Water | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| Starch | Not determined | 10 mg/m³ TWA | Not determined |
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| Xanthan Gum | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Group 1 skin sensitizer |
| Sodium carbonate | Not determined | Not determined | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| 2-aminoethanol | Not determined | 3 ppm TWA<br>Skin notation<br>6 ppm STEL | 3 ppm OEL<br>7.5 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Water | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| Starch | Not determined | Not determined | 10 mg/m³ TWA |
| Polyanionic cellulose | 10 mg/m³ MAC | Not determined | Not determined |
| Xanthan Gum | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| Sodium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| Hexahydro-1,3,5-tris(2-hydroxyethyl )-sym-triazine | Not determined | Not determined | Not determined |
| Sodium carbonate | 2 mg/m³ MAC | Not determined | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| 2-aminoethanol | 0.5 mg/m³ MAC | 8.0 mg/m³ TWA<br>3.0 ppm TWA<br>15.0 mg/m³ STEL<br>6.0 ppm STEL | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Water | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| Starch | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Polyanionic cellulose | Not determined | Not determined | 10 mg/m³ MAC |
| Xanthan Gum | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ TWA | Not determined |
| Hexahydro-1,3,5-tris(2-hydroxyethyl )-sym-triazine | Not determined | Not determined | Not determined |
| Sodium carbonate | Not determined | Not determined | Skin notation<br>2 mg/m³ MAC<br>Skin |
| Glyoxal | Not determined | Not determined | Not determined |
| 2-aminoethanol | 3 ppm TWA<br>7.5 mg/m³ TWA | 3 ppm TWA<br>6 mg/m³ TWA | Skin notation<br>0.5 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Water | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| Starch | Not determined | Not determined | Not determined |
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| Xanthan Gum | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |
| Sodium hydroxide | 2 mg/m³ TWA | Not determined | Not determined |
| Hexahydro-1,3,5-tris(2-hydroxyethyl )-sym-triazine | Not determined | Not determined | Not determined |
| Sodium carbonate | Not determined | Not determined | Not determined |
| Glyoxal | Not determined | Not determined | Not determined |
| 2-aminoethanol | 3 ppm TWA | 8 mg/m³ TWA<br>15 mg/m³ STEL | 3 ppm STEL<br>7.6 mg/m³ STEL<br>Skin<br>1 ppm TWA<br>2.5 mg/m³ TWA |

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Mild |
| **Color** | Light gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 8.0 - 9.5 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 - 1.4 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | No data available | No data available |
| Water | > 90 mL/kg ( Rat ) | No data available | No data available |
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 2630 mg/kg (Rat) | 3540 mg/kg bw (Rabbit) | No data available |
| Starch | No data available | No data available | No data available |
| Polyanionic cellulose | = 27000 mg/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |
| Xanthan Gum | No data available | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |
| Sodium hydroxide | = 325 mg/kg ( Rat ) | 1350 mg/kg ( Rabbit ) | No data available |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | 1000 mg/kg (Rat) (BASF AG, 1997) | > 4000 mg/kg (Rat) (BASF AG,1997) | 0.371 mg/L (Aerosol) (Rat) (Triazine Taskforce, 2011) |
| Sodium carbonate | = 4090 mg/kg ( Rat ) | No data available | No data available |
| Glyoxal | = 200 mg/kg ( Rat ) | = 12700 mg/kg ( Rabbit ) | = 2410 mg/m³, 3-4 hrs |
| 2-aminoethanol | = 1720 mg/kg ( Rat ) | = 1000 mg/kg ( Rabbit ) = 1 mL/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Water | No information available | No information available | No information available |
| Water | No information available | No information available | No information available |
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |
| Calcium carbonate | No information available | No information available | No information available |
| Barite | No information available | No information available | No information available |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | LC50 >1800 mg/l, 96h Scophthalmus maximus OECD 203 | EC50: 2490 mg/l, 72h Selenastrum capricornutum OECD 201 | EC50 >3200 mg/l, 48h Daphnia magna OECD 202 |
| Starch | No information available | No information available | No information available |
| Polyanionic cellulose | No information available | No information available | No information available |
| Xanthan Gum | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |
| Sodium hydroxide | = 45.4 mg/L LC50 Oncorhynchus mykiss 96 h | No information available | No information available |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | > 168 mg/l LC50 96h Sheepshead Minnow (SLB data) | 1.624 mg/l EC50 72h Skeletonema (SLB data) | 99.68 mg/l KC50 48h Acartia (SLB data) |
| Sodium carbonate | 310 - 1220 mg/L LC50 Pimephales promelas 96 h = 300 mg/L LC50 Lepomis macrochirus 96 h | = 242 mg/L EC50 Nitzschia 120 h | = 265 mg/L EC50 Daphnia magna 48 h |
| Glyoxal | 460 - 680 mg/L LC50 Leuciscus idus 96 h = 215 mg/L LC50 Pimephales promelas 96 h | <= 348.59 mg/L EC50 Pseudokirchneriella subcapitata 96 h > 500 mg/L EC50 Desmodesmus subspicatus 96 h > 500 mg/L EC50 Desmodesmus subspicatus 72 h | = 404 mg/L EC50 Daphnia magna 48 h |
| 2-aminoethanol | > 200 mg/L LC50 Oncorhynchus mykiss 96 h 114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h 300 - 1000 mg/L LC50 Lepomis macrochirus 96 h = 3684 mg/L LC50 Brachydanio rerio 96 h = 227 mg/L LC50 Pimephales promelas 96 h | = 15 mg/L EC50 Desmodesmus subspicatus 72 h | = 65 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Barite | Inorganic compound |

| | |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | OECD 301D 76% |
| Crystalline silica (impurity) | Inorganic compound |
| Sodium hydroxide | Inorganic compound |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Readily biodegradable |
| Glyoxal | Readily biodegradable |
| 2-aminoethanol | Readily biodegradable |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |
| Barite | Product/Substance is inorganic |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | log Kow 0.44@20°C |
| Crystalline silica (impurity) | Product/Substance is inorganic |
| Sodium hydroxide | Product/Substance is inorganic |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not likely to bioaccumulate log Kow <=3 |
| Glyoxal | Not likely to bioaccumulate - Bioconcentration factor (BCF) 2.155 |
| 2-aminoethanol | Product does not bioaccumulate due to reaction with water |

## 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |
| Barite | Insoluble in water |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Soluble in water |
| Crystalline silica (impurity) | Insoluble in water |
| Sodium hydroxide | Soluble in water |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Soluble in water |
| Glyoxal | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |
| Barite | Not expected to adsorb on soil |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |
| Sodium hydroxide | Not expected to adsorb on soil |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Study does not need to be conducted because the substance is readily biodegradable |
| Glyoxal | Not expected to adsorb on soil |
| 2-aminoethanol | Study does not need to be conducted because the substance is readily biodegradable |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium Chloride
Schedule 4
Sodium hydroxide
Schedule 6
Schedule 5
Sodium carbonate
Schedule 6
Schedule 5
2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 07-Jul-2015 |
| **Revision date** | 13-Jun-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D044
**Version** 3
**Revision date** 15-Jan-2020
**Supersedes Date:** 11-Jun-2015

# Safety Data Sheet
## Granulated Salt D44

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Granulated Salt D44
**Product code** D044

Molecular weight 58.44

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Clay control agent in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium chloride

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium chloride | 231-598-3 | 7647-14-5 | 60-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Hydrogen chloride, Heating or fire can release toxic gas.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid excessive heat for prolonged periods of time. Avoid contact with: Acids Alkali metals Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Rubber Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Half mask with a

| | |
|---|---|
| | particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 6 - 8 | @ 5 g/l |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 801 °C / 1474 °F | |
| **Boiling point/range** | 1413 °C / 2575 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.0-2.3 g/cm3 | |
| **Bulk density** | 1050 - 1300 kg/m$^3$ | |
| **Relative density** | 2.16 g/cm3 | @ 20°C. |
| **Water solubility** | 360 g/l | @ 20 °C |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 58.44 |

| | |
|---|---|
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid excessive heat for prolonged periods of time. Protect from moisture.

### 10.5 Incompatible materials

Acids. Alkali metals. Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. Eye contact. Skin contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 11-Jun-2015 |
| **Revision date** | 15-Jan-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID686
**Version** 10
**Revision date** 24-Sep-2019
**Supersedes Date:** 11-Dec-2018

# Safety Data Sheet
## G-SEAL* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** G-SEAL* (All Grades)
**Product code** PID686

**Synonyms** G-SEAL* FINE

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Plugging agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Graphite

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Graphite | 231-955-3 | 7782-42-5 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Graphite | 2 mg/m³ TWA | 3mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Graphite | Not determined | 2 mg/m³ TWA | 2 mg/m³ OEL<br>0.5 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Graphite | Not determined | Not determined | 3 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Graphite | 2 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Graphite | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may

be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. No personal respiratory protective equipment normally required |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Gray - Black |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 3652 °C / 6605.6 °F | |
| **Boiling point/range** | 4827 °C / 8720.6 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.19 - 2.26 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |

| | |
|---|---|
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | > 500 °C / 932 °F |
| **Decomposition temperature** | > 400 °C / 752°F |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition. Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Graphite | > 2000 mg/kg Rat OECD 423 | No data available | > 2000 mg/m³ Rat OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Graphite | LC50 > 100 mg/l, 96h OECD 203 | EC50 > 100 mg/l 72h OECD 201 | EC50 > 100 mg/l 48h202 |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 11-Dec-2018 |
| **Revision date** | 24-Sep-2019 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | 1, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID16789
**Version** 3
**Revision date** 31-Jul-2017
**Supersedes Date:** 03-Dec-2014

# Safety Data Sheet
## G-SEAL* PLUS COARSE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** G-SEAL* PLUS COARSE
**Product code** PID16789

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Plugging agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Graphite

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Graphite | Listed | Proprietary | 10-30 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 0.1 - 1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very

slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Oxidizing agents Acids Alkalis

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Graphite | 2 mg/m³ TWA | 3mg/m³TWArespirable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| Graphite | Not determined | 2 mg/m³ TWA | 2 mg/m³ OEL<br>0.5 mg/m³ OEL |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Graphite | Not determined | Not determined | 3 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Graphite | 2 mg/m³ TWA | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Graphite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** — Solid
**Appearance** — Powder Dust

| | |
|---|---|
| **Odor** | Odorless |
| **Color** | Gray - Black |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | n/a | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.9 - 2.1 sg | @ 20 °C |
| **Bulk density** | 17.5245 lbs/gal | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Oxidizing agents. Acids. Alkalis.

### 10.6 Hazardous decomposition products

See Section 5.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Graphite | No data available | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Graphite | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**

See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Dec-2014 |
| **Revision date** | 31-Jul-2017 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12351
**Version** 5
**Revision date** 08-Jul-2018
**Supersedes Date:** 19-Feb-2016

# Safety Data Sheet
## G-SEAL* PLUS

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** G-SEAL* PLUS
**Product code** PID12351

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Plugging agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Graphite

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
May cause slight irritation
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Graphite | 231-955-3 | 7782-42-5 | 5-10 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | < 1 |

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Graphite | 2 mg/m³ TWA | 3mg/m³TWArespirable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Graphite | Not determined | 2 mg/m³ TWA | 2 mg/m³ OEL<br>0.5 mg/m³ OEL |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Graphite | Not determined | Not determined | 3 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Graphite | 2 mg/m³ TWA | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Graphite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** — Solid
**Appearance** — Powder
**Odor** — Odorless
**Color** — Gray - Black
**Odor threshold** — Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6 - 8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 3652 °C / 6605.6 °F | |
| **Boiling point/range** | 4827 °C / 8720.6 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | Not applicable |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.9 - 2.1 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | > 500 °C / >932 °F | |
| **Decomposition temperature** | > 400°C / >752°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Avoid dust formation. Heat, flames and sparks.

**10.5 Incompatible materials**

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Graphite | No data available | No data available | No data available |
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Graphite | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 19-Feb-2016 |
| **Revision date** | 08-Jul-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on**

**measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

HALLIBURTON

# SAFETY DATA SHEET

# STARCIDE®

**Revision Date:** 15-Nov-2018 **Revision Number:** 7

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** STARCIDE®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HB003388

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Bactericide

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Acute inhalation toxicity - vapor | Category 4 - H332 |
| Acute inhalation toxicity - dust/mist | Category 4 - H332 |
| Skin Corrosion/Irritation | Category 1 - H314 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Skin Sensitization | Category 1 - H317 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |
| Acute Aquatic Toxicity | Category 2 - H401 |
| Chronic Aquatic Toxicity | Category 3 - H412 |

- H251

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H317 - May cause an allergic skin reaction
H373 - May cause damage to organs through prolonged or repeated exposure
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements**

**Prevention**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P391 - Collect spillage

**Storage**
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | 60 - 100% | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H332)<br>Skin Corr. 1C (H314)<br>Eye Corr. 1 (H318)<br>Skin Sens. 1 (H317)<br>STOT RE 2 (H373)<br>Aquatic Acute 2 (H401)<br>Aquatic Chronic 3 (H412) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, move victim to fresh air and seek medical attention.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. Harmful if swallowed. Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation. Evacuate all persons from the area.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

### 7.1. Precautions for safe handling

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Do NOT consume food, drink, or tobacco in contaminated areas. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**

Store in original container. Store away from oxidizers. Store away from acids. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 12 months. Keep Away From Food

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

### Control parameters - exposure standards, biological monitoring

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Not applicable | Not applicable |

### Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area.

### Personal protective equipment (PPE)

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Organic vapor respirator.

**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. Butyl rubber gloves. (>= 0.7 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not flush into surface water or sanitary sewer system Avoid subsoil penetration

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Colorless to slight yellow |
| **Odor:** | Sweet amine | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 10 (0.15%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | < -35 °C / -31 °F |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 204 °C / 399.2 °F |
| **Flash Point** | > 100 °C / > 212 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 0.014 hPa |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.049 - 1.069 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | benzene heptane |
| **Partition coefficient: n-octanol/water** | 1.89 |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | 21 mPas @ 20°C |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 186.25 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers. Strong acids. Reducing agents.
**10.6. Hazardous decomposition products**
Formaldehyde. Oxides of nitrogen. Oxides of sulfur.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. Harmful if swallowed. Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | 900 mg/kg (Rat) | - | 2 mg/L (Rat, 4 hr, aerosol) |

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | Harmful if inhaled. Causes severe respiratory irritation. |
| **Eye Contact** | Causes eye burns |
| **Skin Contact** | Causes severe burns. May cause an allergic skin reaction. |

**Ingestion** Harmful if swallowed. Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** Prolonged or repeated exposure may cause damage to the upper respiratory tract. Formaldehyde, a suspected carcinogen, is released when heated.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Eye ailments.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Causes severe irritation and or burns (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Causes severe irritation and or burns (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | May cause sensitization by skin contact (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Causes damage to organs through prolonged or repeated exposure: Gastrointestinal tract (GI) Respiratory system |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**
**Product Ecotoxicity Data**
Product is not classified as hazardous to the environment.

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to | Toxicity to Invertebrates |
|---|---|---|---|---|---|

| | | | | Microorganisms | |
|---|---|---|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | EC50(72 h)=5.7 mg/L (Desmodesmus subspicatus) EC50()=3.35 mg/L (Skeletonema costatum) | LC50(96 h)=135.21 mg/L (Scophthalmus maximus) | EC50: 44 mg/L (activated sludge) | EC50(48 h)=37.9 mg/L (Daphnia magna) EC50(48 h)=4.1 mg/L (Acartia tonsa) NOEC(21 d)=1.3 mg/L (Daphnia magna) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Readily biodegradable (69.4% @ 28d) |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | Log Pow=-0.11 |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| 3, 3'-Methylene bis (5-methyl oxazolidine) | 66204-44-2 | No information available |

### 12.6. Other adverse effects

Does not contain any organically bound halogen. May not increase the AOX value when discharged from treatment plants or into natural waters.

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

### Safe handling and disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

### Disposal of any contaminated packaging

Follow all applicable national or local regulations.

### Environmental regulations

Not applicable

## 14. Transport Information

### Transportation Information

**Australia ADG**

**UN Number** UN2735
**UN proper shipping name:** Amines, Liquid, Corrosive, N.O.S. (Contains N, N' -Methylenebis[5-methyl oxazolidine])
**Transport Hazard Class(es):** 8
**Packing Group:** III
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** UN2735
**UN proper shipping name:** Amines, Liquid, Corrosive, N.O.S. (Contains N, N' -Methylenebis[5-methyl oxazolidine])
**Transport Hazard Class(es):** 8
**Packing Group:** III
**Environmental Hazards:** Not applicable
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number** UN2735

| | |
|---|---|
| **UN proper shipping name:** | Amines, Liquid, Corrosive, N.O.S. (Contains N, N' -Methylenebis[5-methyl oxazolidine]) |
| **Transport Hazard Class(es):** | 8 |
| **Packing Group:** | III |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
2X

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 15-Nov-2018

**Revision Note**

**Full text of H-Statements referred to under sections 2 and 3**
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H411 - Toxic to aquatic life with long lasting effects

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight

CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
STEL – Short Term Exposure Limit
SU – Sector of Use category
TWA – Time-Weighted Average
UN – United Nations
VOC – Volatile Organic Carbon
vPvB – very Persistent and very Bioaccumulative
VLA-ED - time-weighted average values for a whole work shift [Spain valores límite ambientales para la exposición diaria]
NDS - najwyisze dopuszczalne stkienie na stanowisku pracy
SZW - Netherlands Ministry of Social Affairs and Employment
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS 1715 - New Zeland Standard on Selection, use and maintenance of respiratory protective equipment
C - Celsius
EN 149 - European standard on filtering halfmasks to protect against particles
EN 374 - European standard on Protective gloves against chemicals and micro-organisms
FFP - Filtering Facepieces
h - hour
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NDS - OEL-TWA [Poland najwyisze dopuszczalne stkienie na stanowisku pracy]
R/H-phrases - Risk/Hazard-phrases
RID - The European Agreement concerning the International Carriage of Dangerous Goods by Rail
UK - United Kingdom
w/w - weight/weight
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
MAK - Maximum Workplace Concentration
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained

from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# ALDACIDE® G ANTIMICROBIAL

**Revision Date:** 06-Apr-2021 **Revision Number:** 11

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** ALDACIDE® G ANTIMICROBIAL

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HB003462

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Biocide

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Acute inhalation toxicity - vapor | Category 3 - H331 |
| Skin Corrosion/Irritation | Category 1 - H314 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Respiratory Sensitization | Category 1 - H334 |
| Skin Sensitization | Category 1 - H317 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Acute Aquatic Toxicity | Category 1 - H400 |

| | |
|---|---|
| Chronic Aquatic Toxicity | Category 3 - H412 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P281 - Use personal protective equipment as required
P285 - In case of inadequate ventilation wear respiratory protection

**Response**
P301+ P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P391 - Collect spillage

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

| **Contains Substances** | **CAS Number** |
|---|---|
| Glutaraldehyde | 111-30-8 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 10 - 30% | Acute Tox. 3 (H301)<br>Acute Tox. 2 (H330)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>Resp. Sens. 1 (H334)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 2 (H411) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Evacuate all persons from the area. Use only competent persons for cleanup.

### 6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

### 6.3. Methods and material for containment and cleaning up

Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### 7.1. Precautions for safe handling

**Handling Precautions**

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid breathing mist. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**

Store away from acids. Store away from alkalis. Store in a well ventilated area. Keep container closed when not in use. Store locked up. Product has a shelf life of 36 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

### Control parameters - exposure standards, biological monitoring

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable | Ceiling: 0.05 ppm |

### Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation. If vapors are strong enough to be irritating to the nose or eyes, the TLV is probably being exceeded and special ventilation or respiratory protection maybe required.

### Personal protective equipment (PPE)

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

**Hand Protection** Impervious gloves Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Clear light yellow |
| **Odor:** | Sharp | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 3.1-4.5 |
| **Freezing Point / Range** | (-5) - (-10) °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100.5 °C / 213 °F |
| **Flash Point** | No data available |
| **Evaporation rate** | 0.9 |
| **Vapor Pressure** | 0.2 mmHg |
| **Vapor Density** | 0.8 |
| **Specific Gravity** | 1.064 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | -0.333 |
| **Autoignition Temperature** | > 275 °C / > 527 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible materials**

Strong acids. Strong alkalis.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation; Ingestion.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 50 mg/kg (Guinea Pig) | 560 µL/kg (Rabbit) | 0.28-0.5 mg/L (Rat) 4h |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Toxic if inhaled. Causes severe respiratory irritation. May cause allergic respiratory reaction. Inhalation of vapors may result in skin sensitization.

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Causes severe burns. May cause an allergic skin reaction.

**Ingestion** Harmful if swallowed. Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Lung disorders. Liver disorders.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe skin irritation with tissue destruction. (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe eye irritation which may damage tissue. (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Skin sensitizer in guinea pig. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause sensitization by inhalation |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not a confirmed teratogen or embryotoxin. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Glutaraldehyde | 111-30-8 | No information available |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause disorder and damage to the Kidney |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | EC50(72h): 0.61 mg/L (Desmodesmus subspicatus)<br>EC50(72h): 0.5 mg/L (Skeletonema costatum) | LC50(96h): 10 mg/L (Lepomis macrochirus)<br>NOEC(97d): 1.6 mg/L (Oncorhynchus mykiss)<br>LC50(96h): 3.5 mg/L (Oncorhynchus mykiss) | EC50 (17h) 6.65 mg/L (Pseudomonas putida) | EC50(48h): 0.35 mg/L (Daphnia magna)<br>EC50(48h): 0.7 mg/L (Acartia tonsa)<br>NOEC(21d): 0.13 mg/L (Daphnia magna) |

| | | | | | |
|---|---|---|---|---|---|
| | | | LC50(96h): 60 mg/L (Scophthalmus maximus) | | EC50(48h): 0.1 mg/L (Acartia tonsa) |

**12.2. Persistence and degradability**

Readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Readily biodegradable (75% @ 28d) |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | -0.36 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry'sconstant (3.3E-08 atm*m3/mole; 25 °C Measured), volatilization from natural bodies of water or moist soil is not expected to be an important fate process. |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant

**IMDG/IMO**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
2X

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
S6

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 06-Apr-2021

**Revision Note**
SDS sections updated:
2
3
4
11
14

**Full text of H-Statements referred to under sections 2 and 3**
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

**Additional information** For additional information on the use of this product, contact your local Halliburton

representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# ALDACIDE® G ANTIMICROBIAL

**Revision Date:** 06-Apr-2021 **Revision Number:** 11

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** ALDACIDE® G ANTIMICROBIAL

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HB003462

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Biocide

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Acute inhalation toxicity - vapor | Category 3 - H331 |
| Skin Corrosion/Irritation | Category 1 - H314 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Respiratory Sensitization | Category 1 - H334 |
| Skin Sensitization | Category 1 - H317 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Acute Aquatic Toxicity | Category 1 - H400 |

| | |
|---|---|
| Chronic Aquatic Toxicity | Category 3 - H412 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P281 - Use personal protective equipment as required
P285 - In case of inadequate ventilation wear respiratory protection

**Response**
P301+ P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P391 - Collect spillage

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

| **Contains Substances** | **CAS Number** |
|---|---|
| Glutaraldehyde | 111-30-8 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 10 - 30% | Acute Tox. 3 (H301)<br>Acute Tox. 2 (H330)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>Resp. Sens. 1 (H334)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 2 (H411) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Evacuate all persons from the area. Use only competent persons for cleanup.

### 6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

### 6.3. Methods and material for containment and cleaning up

Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

### 7.1. Precautions for safe handling

**Handling Precautions**

Use appropriate protective equipment. Ensure adequate ventilation. Avoid breathing vapors. Avoid breathing mist. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**

Store away from acids. Store away from alkalis. Store in a well ventilated area. Keep container closed when not in use. Store locked up. Product has a shelf life of 36 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

### Control parameters - exposure standards, biological monitoring

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable | Ceiling: 0.05 ppm |

### Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation. If vapors are strong enough to be irritating to the nose or eyes, the TLV is probably being exceeded and special ventilation or respiratory protection maybe required.

### Personal protective equipment (PPE)

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator.

**Hand Protection** Impervious gloves Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Clear light yellow |
| **Odor:** | Sharp | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 3.1-4.5 |
| **Freezing Point / Range** | (-5) - (-10) °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100.5 °C / 213 °F |
| **Flash Point** | No data available |
| **Evaporation rate** | 0.9 |
| **Vapor Pressure** | 0.2 mmHg |
| **Vapor Density** | 0.8 |
| **Specific Gravity** | 1.064 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | -0.333 |
| **Autoignition Temperature** | > 275 °C / > 527 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible materials**

Strong acids. Strong alkalis.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation; Ingestion.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause allergic skin reaction. May cause allergic respiratory reaction. May cause respiratory irritation. Harmful if swallowed. Toxic if inhaled.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 50 mg/kg (Guinea Pig) | 560 µL/kg (Rabbit) | 0.28-0.5 mg/L (Rat) 4h |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Toxic if inhaled. Causes severe respiratory irritation. May cause allergic respiratory reaction. Inhalation of vapors may result in skin sensitization.

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Causes severe burns. May cause an allergic skin reaction.

**Ingestion** Harmful if swallowed. Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Lung disorders. Liver disorders.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe skin irritation with tissue destruction. (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe eye irritation which may damage tissue. (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Skin sensitizer in guinea pig. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause sensitization by inhalation |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not a confirmed teratogen or embryotoxin. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Glutaraldehyde | 111-30-8 | No information available |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause disorder and damage to the Kidney |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | EC50(72h): 0.61 mg/L (Desmodesmus subspicatus)<br>EC50(72h): 0.5 mg/L (Skeletonema costatum) | LC50(96h): 10 mg/L (Lepomis macrochirus)<br>NOEC(97d): 1.6 mg/L (Oncorhynchus mykiss)<br>LC50(96h): 3.5 mg/L (Oncorhynchus mykiss) | EC50 (17h) 6.65 mg/L (Pseudomonas putida) | EC50(48h): 0.35 mg/L (Daphnia magna)<br>EC50(48h): 0.7 mg/L (Acartia tonsa)<br>NOEC(21d): 0.13 mg/L (Daphnia magna) |

| | | | | | |
|---|---|---|---|---|---|
| | | | LC50(96h): 60 mg/L (Scophthalmus maximus) | | EC50(48h): 0.1 mg/L (Acartia tonsa) |

**12.2. Persistence and degradability**

Readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Readily biodegradable (75% @ 28d) |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | -0.36 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry'sconstant (3.3E-08 atm*m3/mole; 25 °C Measured), volatilization from natural bodies of water or moist soil is not expected to be an important fate process. |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant

**IMDG/IMO**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number** UN3265
**UN proper shipping name:** Corrosive Liquid, Acidic, Organic, N.O.S. (Contains Glutaraldehyde)
**Transport Hazard Class(es):** 8
**Packing Group:** II
**Environmental Hazards:** Marine Pollutant

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
2X

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
S6

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 06-Apr-2021

**Revision Note**
SDS sections updated:
2
3
4
11
14

**Full text of H-Statements referred to under sections 2 and 3**
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H330 - Fatal if inhaled
H331 - Toxic if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

**Additional information** For additional information on the use of this product, contact your local Halliburton

representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

**SDS no.** D076
**Version** 3
**Revision date** 04-Jan-2018
**Supersedes date** 31-Jul-2014

# Safety Data Sheet
## Hematite Weighting Agent D76

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Hematite Weighting Agent D76
**Product code** D076

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Hematite (diiron trioxide)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hematite (diiron trioxide) | 215-168-2 | 1309-37-1 | 60-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek medical attention if irritation occurs.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hematite (diiron trioxide) | 5 mg/m³ TWA | 5mg/m³TWAfume<br>10mg/m³TWAinhalable dust | 5 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hematite (diiron trioxide) | 5 mg/m³ TWA | 5 mg/m³ TWA<br>10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hematite (diiron trioxide) | Not determined | Not determined | 10 mg/m³ TWA<br>5 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hematite (diiron trioxide) | 2 ppm TWA<br>5 mg/m³ TWA | 10 mg/m³ TWA | 6 mg/m³ TWA<br>Fibrogenic substance 1004 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hematite (diiron trioxide) | Not determined | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | It is good practice to wear goggles when handling any chemical Tightly fitting safety goggles |
| **Hand protection** | Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile PVC |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Effective dust mask. Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Musty |
| **Color** | Red brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | | |
| **Melting / freezing point** | > 1700 °C / 3092 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not combustible | |
| **Evaporation rate (BuAc =1)** | | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | >1 (air=1) | |
| **Specific gravity** | 4.8-5.0 | 20 °C |
| **Bulk density** | 2800 kg/m$^3$ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | 0 |
| **Density** | 5.25 g/cm³ (@25°C) |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid handling causing generation of dust.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See also section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hematite (diiron trioxide) | > 10000 mg/kg ( Rat ) | No data available | No data available |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This substance has no evidence of mutagenic properties. |
| **Carcinogenicity** | This substance has no evidence of carcinogenic properties. |
| **Reproductive toxicity** | None known. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | No hazard from product as supplied. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hematite (diiron trioxide) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Hematite (diiron trioxide)
Schedule 4
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes date** | 31-Jul-2014 |
| **Revision date** | 04-Jan-2018 |
| **Version** | 3 |
| **This SDS has been revised in the** | SDS sections updated 1, 2, 8, 15, 16. No changes with regard to classification have been |

**following section(s)** made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **ACETIC ACID**

**Revision Date:** 27-Aug-2013

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

| | |
|---|---|
| **Product Trade Name:** | ACETIC ACID |
| **Synonyms:** | None |
| **Chemical Family:** | Organic acid |
| **UN Number:** | , UN2790 |
| **Dangerous Goods Class:** | 8 |
| **Subsidiary Risk:** | None |
| **Hazchem Code:** | 2P |
| **Poisons Schedule:** | S6 |
| **Application:** | Acid |

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT (w/w) | Australia NOHSC | New Zealand WES | ACGIH TLV-TWA |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Acetic acid | 64-19-7 | 30 - 60% | TWA: 10 ppm TWA: 25 mg/m$^3$ STEL: 15 ppm STEL: 37 mg/m$^3$ | STEL: 15 ppm STEL: 37 mg/m$^3$ TWA: 10 ppm TWA: 25 mg/m$^3$ | TWA: 10 ppm STEL: 15 ppm |

**Non-Hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory burns. May be harmful if swallowed. Combustible.

**Risk Phrases** R10 Flammable.

R34 Causes burns.

**HSNO Classification** Not Determined

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

**Special Exposure Hazards** Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

| | |
|---|---|
| **Procedure for Cleaning / Absorption** | Isolate spill and stop leak where safe. Neutralize with lime slurry, limestone, or soda ash. Contain spill with sand or other inert materials. Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. |
| **Storage Information** | Store away from alkalis. Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation. |
| **Respiratory Protection** | Organic vapor/acid gas respirator. |
| **Hand Protection** | Impervious rubber gloves. Neoprene gloves. Nitrile gloves. Butyl rubber gloves. |
| **Skin Protection** | Full protective chemical resistant clothing. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Color:** | Clear |
| **Odor:** | Acrid |
| **pH:** | 2.9 |
| **Specific Gravity @ 20 C (Water=1):** | 1.05 |
| **Density @ 20 C (kg/l):** | 1.048 |
| **Bulk Density @ 20 C (kg/M3):** | Not Determined |
| **Boiling Point/Range (C):** | 117 |
| **Freezing Point/Range (C):** | 16 |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | 42 |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | 5.4 |
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | 16 |
| **Vapor Pressure @ 20 C (mmHg):** | 11.7 |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 100 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 60.6 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** Keep away from heat, sparks and flame.

**Incompatibility (Materials to Avoid)** Strong alkalis.

**Hazardous Decomposition Products** Toxic fumes. Carbon monoxide and carbon dioxide.

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Sympotoms related to exposure**

**Acute Toxicity**

**Inhalation** Causes severe respiratory irritation.

**Eye Contact** May cause eye burns.

**Skin Contact** Causes severe burns.

**Ingestion** Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** Prolonged, excessive exposure may cause erosion of the teeth.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Acetic acid | 64-19-7 | 3310 mg/kg ( Rat )<br>600 mg/kg (Rabbit) | 1060 mg/kg ( Rabbit ) | 11.4 mg/L ( Rat ) 4 h |

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

**Ecotoxicity Product**

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** Not determined

**Acute Algae Toxicity:** Not determined

**Ecotoxicity Substance**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---|---|---|---|---|---|
| Acetic acid | 64-19-7 | EC50: 90 mg/L (Microcystis aeruginosa) | LC50: 79 mg/l (Pimephales promelas)<br>LC50: 75 mg/l (Pimephales promelas) | No information available | EC50: 47 mg/l (Daphnia magna)<br>LC50: 32 mg/L (Artemia salina) |

**Persistence and degradability**

Readily biodegradable

**Bioaccumulative potential**

Does not bioaccumulate

**Mobility in soil**
No information available

**Results of PBT and vPvB assessment**
No information available.

**Other adverse effects**

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**

UN2790, Acetic Acid Solution , 8 , III

### Air Transportation

**ICAO/IATA**

UN2790, Acetic Acid Solution , 8 , III
RQ (Acetic Acid - 5683 kg.)

### Sea Transportation

**IMDG**

UN2790, Acetic Acid Solution , 8 , III
RQ (Acetic Acid - 5683 kg.)
EmS F-A, S-B

### Other Transportation Information

**Labels:** Corrosive

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed on inventory or are exempt. |
| **New Zealand Inventory of Chemicals** | All components listed on inventory or are exempt. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |

**Classification** C - Corrosive.

**Risk Phrases**

R10 Flammable.

R34 Causes burns.

**Safety Phrases**

S23 Do not breathe gas, fumes, vapour or spray.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 In case of accident or if you feel unwell, seek medical advice immediately.
S1/2 Keep locked up and out of reach of children.

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this SDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **BE-9**

**Revision Date:** 21-Dec-2012

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** BE-9
**Synonyms:** None
**Chemical Family:** Solution
**UN Number:** , UN2922
**Dangerous Goods Class:** 6.1
**Subsidiary Risk:** 8
**Hazchem Code:** 2X
**Poisons Schedule:** None
**Application:** Biocide

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | Australia NOHSC | New Zealand OEL | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Tributyl tetradecyl phosphonium chloride | 81741-28-8 | 5 - 10% | Not applicable | Not applicable | Not applicable |

**Non-Hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and skin burns. May cause respiratory irritation. May be harmful if swallowed. May be harmful if inhaled.

**Risk Phrases** R22 Harmful if swallowed.
R36/38 Irritating to eyes and skin.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**HSNO Classification** Not Determined

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse. Remove contaminated shoes and discard.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** If swallowed, do NOT induce vomiting. Give victim two glasses of water, Call a physician immediately. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons** None known.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways. Use water spray to cool fire exposed surfaces.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Do NOT consume food, drink, or tobacco in contaminated areas.

**Storage Information** Store in a cool well ventilated area. Keep container closed when not in use. Store away from direct sunlight. Store in a dry location. Store in a manner to prevent commingling with incompatible materials. Store away from alkalis. Store away from reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Impervious rubber gloves. Neoprene gloves. Polyvinylchloride gloves.

**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Color:** | Clear colorless |
| **Odor:** | Slight |
| **pH:** | 6-8 |
| **Specific Gravity @ 20 C (Water=1):** | 0.95-1.00 |
| **Density @ 20 C (kg/l):** | 0.95-1.00 |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | 100 |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Miscible |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Viscosity, Kinematic @ 20 C (centistokes):** | 55-65 |
| **Partition Coefficient/n-Octanol/Water:** | < 3 |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Reducing agents. Strong alkalis. |
| **Hazardous Decomposition Products** | Chlorine. Phosphorus acids. Carbon monoxide and carbon dioxide. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | May cause respiratory irritation. May be harmful if inhaled. |
| **Skin Contact** | May cause skin burns. Harmful if absorbed through the skin. |
| **Eye Contact** | May cause eye burns. |
| **Ingestion** | May be harmful if swallowed. |
| **Aggravated Medical Conditions** | Lung disorders. Skin disorders. |
| **Chronic Effects/Carcinogenicity** | Not determined |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | LD50: > 2000 mg/kg (Rat) |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | LC50: 0.9 mg/l 4-hour (rat) (TTPC) |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Not determined |
| **Genotoxicity:** | Ames test: negative |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Readily biodegradable |

**Bio-accumulation** Not determined

## Ecotoxicological Information

**Acute Fish Toxicity:** LC50: (96 hour) 0.46 mg/L (Oncorhynchus mykiss)
LC50: (96 hour) 0.06 mg/l (Lepomis macrochirus)
LC50: (96 hour) 0.58 mg/l (fish)
**Acute Crustaceans Toxicity:** TLM96: 1.6 mg/l (Crangon crangon) TLM48: 0.025 mg/l (Daphnia magna)
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**

UN2922, Corrosive Liquid, Toxic, N.O.S.(contains Tributyl Tetradecyl Phosphonium Chloride), 8, (6.1), II

### Air Transportation

**ICAO/IATA**

UN2922, Corrosive Liquid, Toxic, N.O.S., 8, (6.1), II
(contains Tributyl Tetradecyl Phosphonium Chloride)

### Sea Transportation

**IMDG**

UN2922, Corrosive Liquid, Toxic, N.O.S.(contains Tributyl Tetradecyl Phosphonium Chloride), 8, (6.1), II
EmS F-A, S-B

### Other Transportation Information

**Labels:** Corrosive
Toxic

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** All components listed on inventory or are exempt.
**New Zealand Inventory of Chemicals** This product does not comply with NZIOC
**US TSCA Inventory** All components listed on inventory or are exempt.
**EINECS Inventory** This product, and all its components, complies with EINECS

| | |
|---|---|
| **Classification** | Xi - Irritant.<br>N - Dangerous For The Environment. |
| **Risk Phrases** | R22 Harmful if swallowed.<br>R36/38 Irritating to eyes and skin.<br>R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| **Safety Phrases** | S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.<br>S45 In case of accident or if you feel unwell, seek medical advice immediately.<br>S60 This material and/or its container must be disposed of as hazardous waste.<br>S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.<br>S1/2 Keep locked up and out of reach of children.<br>S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Section 15. Regulatory Information

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

| | |
|---|---|
| **Additional Information** | For additional information on the use of this product, contact your local Halliburton representative.<br><br>For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335. |
| **Disclaimer Statement** | This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user. |

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **CLBXTAU121**

**Revision Date:** 07-Nov-2012

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substance or Preparation**

**Product Trade Name:** CLBXTAU121
**Synonyms:** None
**Chemical Family:** Organic hydrocarbon
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Breaker

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance | CAS Number | Percent | Australia NOHSC | New Zealand OEL | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Citric acid, triethyl ester | 77-93-0 | 60 - 100% | Not determined | Not determined | Not applicable |

**Non-hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

| | |
|---|---|
| **Hazard Overview** | No significant hazards expected. |
| **Risk Phrases** | None |
| **HSNO Classification** | Non-hazardous |

## 4. FIRST AID MEASURES

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Skin** | Get medical attention if irritation persists. Wash with soap and water. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 25 minutes and get medical attention if irritation persists. |
| **Ingestion** | Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person. |
| **Notes to Physician** | Not Applicable |

## 5. FIRE FIGHTING MEASURES

| | |
|---|---|
| **Suitable Extinguishing Media** | Water fog, carbon dioxide, foam, dry chemical. |
| **Unsuitable Extinguishing Media** | None known |
| **Special Exposure Hazards** | Not applicable. |
| **Special Protective Equipment for Fire-Fighters** | Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel. |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautionary Measures** | Use Appropriate protective equipment. Slippery when wet. |
| **Environmental Precautionary Measures** | Prevent from entering sewers, waterways or low areas. |
| **Procedure for Cleaning/Absorption** | Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Wash hands after use. Avoid contact with eyes, skin, or clothing. Avoid breathing mist. Avoid breathing vapours. |
| **Storage Information** | Keep from freezing. Store away from oxidisers. Keep container closed when not in use. Store in a well ventilated area. Product has a shelf life of 24 months |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. |

| | |
|---|---|
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.<br><br>Not normally needed. But if significant exposures are possible then the following respirator is recommended. Dust/mist respirator. (N95,P2/P3) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Colour:** | Light green |
| **Odour:** | Odourless |
| **pH:** | Not Determined |
| **Specific Gravity @ 20 C (Water=1):** | 1.14 |
| **Density @ 20 C (kg/l):** | 0.988 |
| **Bulk Density @ 20 C (kg/l):** | Not Determined |
| **Boiling Point/Range (C):** | 294 |
| **Freezing Point/Range (C):** | -45 |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | 155 |
| **Flash Point Method:** | CC |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapour Pressure @ 20 C (mmHg):** | < 1 |
| **Vapour Density (Air=1):** | 9.54 |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate = 1):** | Not determined. |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 276.28 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerisation:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |

| | |
|---|---|
| **Incompatibility (Materials to Avoid)** | None known. |
| **Hazardous Decomposition Products** | Carbon monoxide and carbon dioxide. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | May cause mild respiratory irritation. |
| **Skin Contact** | May cause mild skin irritation. |
| **Eye Contact** | May cause mild eye irritation. |
| **Ingestion** | May cause abdominal pain, vomiting, nausea, and diarrhoea. |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | LD50: > 5000 mg/kg (Rat) |
| **Dermal Toxicity:** | LD50: > 5000 mg/kg (Rabbit) |
| **Inhalation Toxicity:** | LC50: 1300 ppm/6 hr. (Rat) |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity:** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive/Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Not determined |
| **Bio-accumulation** | Not Determined |

### Ecotoxicological Information

| | |
|---|---|
| **Acute Fish Toxicity:** | Not determined |
| **Acute Crustaceans Toxicity:** | Not determined |
| **Acute Algae Toxicity:** | Not determined |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state and local regulations.

**Contaminated Packaging** Empty container completely. Transport with all closures in place. Return for reuse or dispose in a sanitary landfill according to national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed. |
| **New Zealand Inventory of Chemicals** | All components listed on inventory or are exempt. |
| **US TSCA Inventory** | All components listed. |
| **EINECS Inventory** | All components are listed on the inventory. |

**Classification** Not Determined

**Risk Phrases** None

**Safety Phrases** None

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS:**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Product Stewardship at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **CLLAU301**

**Revision Date:** 20-Aug-2012

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substance or Preparation**

**Product Trade Name:** CLLAU301
**Synonyms:** None
**Chemical Family:** Inorganic Blend
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** S6
**Application:** Crosslinker

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance | CAS Number | Percent | Australia NOHSC | New Zealand WES | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Inorganic salt | Proprietary | 5 - 10% | TWA: 2 mg/m$^3$ | TWA: 2 mg/m$^3$ | 2 mg/m$^3$ |

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| | | | | | |
|---|---|---|---|---|---|
| Sulfuric acid | 7664-93-9 | 1 - 5% | TWA: 1 mg/m$^3$<br>STEL: 3 mg/m$^3$ | TWA: 1 mg/m$^3$ | TWA: 0.2 mg/m$^3$ |

**Non-hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin and respiratory irritation.

**Risk Phrases**

R36/38 Irritating to eyes and skin.

**HSNO Classification** 6.1E Acutely Toxic Substances 6.3A Irritating to the skin 6.4A Irritating to the eye 8.1A Corrosive to metals 9.1D Slightly harmful in the aquatic environment

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** All standard fire fighting media

**Unsuitable Extinguishing Media** None known

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use Appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways or low areas.

**Procedure for Cleaning/Absorption** Isolate spill and stop leak where safe. Neutralise with lime slurry, limestone, or soda ash. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing mist.

**Storage Information** Store in a cool, dry location. Product has a shelf life of 24 months

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Not normally needed. But if significant exposures are possible then the following respirator is recommended. Dust/mist respirator. (N95,P2/P3)

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Colour:** | White |
| **Odour:** | Odourless |
| **pH:** | 0.80 |
| **Specific Gravity @ 20 C (Water=1):** | 1.01 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/l):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapour Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapour Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate = 1):** | Not determined. |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerisation:** Will Not Occur

| | |
|---|---|
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Strong alkalis |
| **Hazardous Decomposition Products** | Oxides of sulphur. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Sympotoms related to exposure**

| | |
|---|---|
| **Inhalation** | May cause respiratory irritation. |
| **Skin Contact** | May cause skin irritation. |
| **Eye Contact** | May cause severe eye irritation. |
| **Ingestion** | In large amounts: May cause abdominal pain, vomiting, nausea, and diarrhoea. |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | Contains sulphuric acid, a potential carcinogen. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined. |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity:** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive/Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Not applicable |
| **Bio-accumulation** | Not Determined |

### Ecotoxicological Information

| | |
|---|---|
| **Acute Fish Toxicity:** | Not determined |
| **Acute Crustaceans Toxicity:** | Not determined |
| **Acute Algae Toxicity:** | Not determined |

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed. |
| **New Zealand Inventory of Chemicals** | All components listed on inventory or are exempt. |
| **US TSCA Inventory** | All components listed. |
| **EINECS Inventory** | All components are listed on the inventory. |

**Classification** Xi - Irritant.

**Risk Phrases**

R36/38 Irritating to eyes and skin.

**Safety Phrases**

S23 Do not breathe gas, fumes, vapour or spray.
S24/25 Avoid contact with skin and eyes.

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS:**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Product Stewardship at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **FDP-S1085-13**

**Revision Date:** 21-Feb-2013

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** FDP-S1085-13
**Synonyms:** None
**Chemical Family:** Polymer Blend
**Application:** Scale Inhibitor

**Manufacturer/Supplier**
Halliburton Energy Services, Inc.
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

**Prepared By**
Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | ACGIH TLV-TWA | OSHA PEL-TWA |
|---|---|---|---|---|
| Polyacrylate | | 10 - 30% | Not applicable | Not applicable |

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and skin irritation.

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

| | |
|---|---|
| **Flash Point/Range (F):** | > 200**Min:** > 200 |
| **Flash Point/Range (C):** | > 93.3**Min:** > 95 |
| **Flash Point Method:** | ASTM D3278-78 |
| **Autoignition Temperature (F):** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |

| | |
|---|---|
| **Fire Extinguishing Media** | All standard firefighting media. Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering. |
| **Special Exposure Hazards** | Decomposition in fire may produce toxic gases. |
| **Special Protective Equipment for Fire-Fighters** | Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel. |
| **NFPA Ratings:** | Health 1, Flammability 1, Reactivity 0 |
| **HMIS Ratings:** | Health 1, Flammability 1, Physical Hazard 0 , PPE: B |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautionary Measures** | Use appropriate protective equipment. |
| **Environmental Precautionary Measures** | Prevent from entering sewers, waterways, or low areas. |
| **Procedure for Cleaning / Absorption** | Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Avoid contact with eyes, skin, or clothing. |
| **Storage Information** | Store away from oxidizers. Product has a shelf life of 12 months. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. |
| **Respiratory Protection** | Not normally necessary. |
| **Hand Protection** | Butyl rubber gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Color:** | Clear |
| **Odor:** | Mild |
| **pH:** | 5.7 - 5.9 |
| **Specific Gravity @ 20 C (Water=1):** | 1.137 |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Density @ 20 C (lbs./gallon):** | 9.47 |
| **Bulk Density @ 20 C (lbs/ft3):** | Not Determined |
| **Boiling Point/Range (F):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (F):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | ~ 80 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| Solubility in Water (g/100ml): | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (lbs./gallon):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None known. |
| **Incompatibility (Materials to Avoid)** | Strong oxidizers. |
| **Hazardous Decomposition Products** | Carbon monoxide and carbon dioxide. Toxic monomer fumes. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye and skin contact. |
| **Inhalation** | May cause respiratory irritation. |
| **Skin Contact** | May cause skin irritation. |
| **Eye Contact** | May cause eye irritation. |
| **Ingestion** | Irritation of the mouth, throat, and stomach. |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**DOT**
Not restricted

**Canadian TDG**
Not restricted

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

## Other Transportation Information

**Labels:** None

## 15. REGULATORY INFORMATION

## US Regulations

| | |
|---|---|
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EPA SARA Title III Extremely Hazardous Substances** | Not applicable |
| **EPA SARA (311,312) Hazard Class** | Acute Health Hazard |
| **EPA SARA (313) Chemicals** | This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372). |
| **EPA CERCLA/Superfund Reportable Spill Quantity** | Not applicable. |
| **EPA RCRA Hazardous Waste Classification** | If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA. |
| **California Proposition 65** | All components listed do not apply to the California Proposition 65 Regulation. |
| **MA Right-to-Know Law** | One or more components listed. |
| **NJ Right-to-Know Law** | One or more components listed. |
| **PA Right-to-Know Law** | One or more components listed. |

## Canadian Regulations

| | |
|---|---|
| **Canadian DSL Inventory** | All components listed on inventory or are exempt. |
| **WHMIS Hazard Class** | Un-Controlled |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

| | |
|---|---|
| **Additional Information** | For additional information on the use of this product, contact your local Halliburton representative.<br><br>For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335. |
| **Disclaimer Statement** | This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user. |

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **FE-2**

**Revision Date:** 04-Jan-2011

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** FE-2
**Synonyms:** None
**Chemical Family:** Organic acid
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Iron Control Agent

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Citric acid | 77-92-9 | 60 - 100% | Not applicable | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. Airborne dust may be explosive.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicty:** | 0 |
| **Body Contact:** | 1 |
| **Reactivity:** | 0 |
| **Chronic:** | 0 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons** None known.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

**Storage Information** Store away from alkalis. Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 60 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. |
| **Respiratory Protection** | Dust/mist respirator. (95%) |
| **Hand Protection** | Impervious rubber gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Solid |
| **Color:** | White |
| **Odor:** | Odorless |
| **pH:** | 1.8 |
| **Specific Gravity @ 20 C (Water=1):** | 1.665 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | 1000 |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | 8 |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | 65 |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 0 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 192.13 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Strong alkalis. Strong oxidizers. |
| **Hazardous Decomposition Products** | Carbon monoxide and carbon dioxide. |

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Inhalation** May cause respiratory irritation.

**Skin Contact** May cause skin irritation.

**Eye Contact** May cause severe eye irritation.

**Ingestion** Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Aggravated Medical Conditions** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information** None known.

**Toxicity Tests**

**Oral Toxicity:** LD50: 11700 mg/kg (Rat)

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Biodegradable

**Bio-accumulation** Not determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** TLM96: 100-330 ppm (Crangon crangon)

**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** All components listed.
**US TSCA Inventory** All components listed on inventory or are exempt.
**EINECS Inventory** This product, and all its components, complies with EINECS

**Classification** Xi - Irritant.

**Risk Phrases** R36 Irritating to eyes.

**Safety Phrases**

S24/25 Avoid contact with skin and eyes.

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **FR-50D**

**Revision Date:** 05-Nov-2013

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** FR-50D
**Synonyms:** None
**Chemical Family:** Salt Polymer Blend
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None Allocated
**Poisons Schedule:** None Allocated
**Application:** Friction Reducer

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT (w/w) | Australia NOHSC | New Zealand WES | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Salt | Proprietary | 60 - 100% | Not applicable | Not applicable | Not applicable |

**Non-Hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation.

**Risk Phrases** None

**HSNO Classification** 6.1E Acutely Toxic Substances
6.4A Irritating to the eye

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**
All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**
None known.

**Special Exposure Hazards** Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special Protective Equipment for Fire-Fighters** Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ground and bond containers when transferring from one container to another. Slippery when wet.

**Storage Information** Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Keep from heat, sparks, and open flames. Product has a shelf life of 24 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

HEPA Respirator.

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Powder |
| **Color:** | White |
| **Odor:** | Slight |
| **pH:** | 9 (.5%) |
| **Specific Gravity @ 20 C (Water=1):** | 2.0 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/M3):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** None anticipated

**Incompatibility (Materials to Avoid)** Strong oxidizers.

**Hazardous Decomposition Products** Carbon monoxide and carbon dioxide. Ammonia.

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Sympotoms related to exposure**

**Acute Toxicity**

**Inhalation** May cause respiratory irritation.
**Eye Contact** Causes eye irritation.
**Skin Contact** May cause skin irritation.
**Ingestion** Large doses may cause nausea, vomiting and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Salt | Proprietary | 3 g/kg ( Rat ) | 10 g/kg ( Rabbit ) | 42 g/m³ ( Rat ) 1 h |

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

**Ecotoxicity Product**

**Acute Fish Toxicity:** LC50 (96): > 100 mg/l
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Ecotoxicity Substance**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---|---|---|---|---|---|
| Salt | Proprietary | No information available | TLM96: > 1000 mg/l (Oncorhynchus mykiss) | No information available | TLM96: > 1,000,000 ppm (Mysidopsis bahia) |

**12.2 Persistence and degradability**
No information available

**12.3 Bioaccumulative potential**
No information available

**12.4 Mobility in soil**
No information available

**12.5 Results of PBT and vPvB assessment**
No information available.

**12.6 Other adverse effects**

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Transportation Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed on inventory or are exempt. |
| **New Zealand Inventory of Chemicals** | This product does not comply with NZIOC |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Not Classified |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this SDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **HAI-150E**

**Revision Date:** 27-Aug-2013

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** HAI-150E
**Synonyms:** None
**Chemical Family:** Blend
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None Allocated
**Poisons Schedule:** None Allocated
**Application:** Corrosion Inhibitor

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT (w/w) | Australia NOHSC | New Zealand WES | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Contains no hazardous substances | Mixture | 60 - 100% | Not applicable | Not applicable | Not applicable |

**Non-Hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

| | |
|---|---|
| **Hazard Overview** | May cause eye, skin, and respiratory irritation. |
| **Risk Phrases** | None |
| **HSNO Classification** | Non-hazardous |

## 4. FIRST AID MEASURES

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Skin** | Get medical attention if irritation persists. Wash with soap and water. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Ingestion** | Under normal conditions, first aid procedures are not required. |
| **Notes to Physician** | Not Applicable |

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media**
All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**
None known.

| | |
|---|---|
| **Special Exposure Hazards** | Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential. |
| **Special Protective Equipment for Fire-Fighters** | Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel. |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautionary Measures** | Use appropriate protective equipment. |
| **Environmental Precautionary Measures** | None known. |
| **Procedure for Cleaning / Absorption** | Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Avoid creating or inhaling dust. |
| **Storage Information** | Store away from oxidizers. Store in a dry location. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | A well ventilated area to control dust levels. |
| **Respiratory Protection** | Not normally needed. But if significant exposures are possible then the following respirator is recommended:<br>Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Solid |
| **Color:** | Brown |
| **Odor:** | Coffee bean |
| **pH:** | Not Determined |
| **Specific Gravity @ 20 C (Water=1):** | Not Determined |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/M3):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None known. |
| **Incompatibility (Materials to Avoid)** | Strong oxidizers. |

**Hazardous Decomposition Products** Carbon monoxide and carbon dioxide.

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Sympotoms related to exposure**

**Acute Toxicity**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** May cause mild eye irritation.

**Skin Contact** May cause mild skin irritation.

**Ingestion** None known

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards. Generally Recognized As Safe (GRAS)

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances | Mixture | No data available | No data available | No data available |

## 12. ECOLOGICAL INFORMATION

### Ecotoxicological Information

**Ecotoxicity Product**

**Acute Fish Toxicity:** Not determined

**Acute Crustaceans Toxicity:** Not determined

**Acute Algae Toxicity:** Not determined

**Ecotoxicity Substance**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---|---|---|---|---|---|
| Contains no hazardous substances | Mixture | No information available | No information available | No information available | No information available |

**Persistence and degradability**

Product is biodegradable

**Bioaccumulative potential**

Does not bioaccumulate

**Mobility in soil**

No information available

**Results of PBT and vPvB assessment**

No information available.

**Other adverse effects**

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Transportation Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed on inventory or are exempt. |
| **New Zealand Inventory of Chemicals** | All components listed on inventory or are exempt. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Not Classified |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this SDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **HYDROCHLORIC ACID**

**Revision Date:** 04-Jan-2010

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** HYDROCHLORIC ACID
**Synonyms:** None
**Chemical Family:** Inorganic acid
**UN Number:** , UN1789
**Dangerous Goods Class:** 8
**Subsidiary Risk:** None
**Hazchem Code:** 2R
**Poisons Schedule:** S6
**Application:** Solvent

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Hydrochloric acid | 7647-01-0 | 30 - 60% | 5 ppm | 2 ppm |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory burns. May be harmful if swallowed.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicty:** | 2 |
| **Body Contact:** | 3 |
| **Reactivity:** | 0 |
| **Chronic:** | 0 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons** None known.

**Special Exposure Hazards** May form explosive mixtures with strong alkalis. Decomposition in fire may produce toxic gases. Reaction with steel and certain other metals generates flammable hydrogen gas. Do not allow runoff to enter waterways.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

**Storage Information** Store away from alkalis. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 24 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Acid gas respirator.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Full protective chemical resistant clothing. Rubber boots.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Color:** | Clear colorless |
| **Odor:** | Pungent acrid |
| **pH:** | 0.8 |
| **Specific Gravity @ 20 C (Water=1):** | 1.18 |
| **Density @ 20 C (kg/l):** | 1.16 |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | 110 |
| **Freezing Point/Range (C):** | -46 |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | 26 |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 35 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 36.5 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** None anticipated

| | |
|---|---|
| **Incompatibility (Materials to Avoid)** | Strong alkalis. |
| **Hazardous Decomposition Products** | Flammable hydrogen gas. Chlorine. Hydrogen sulfide. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | Causes severe respiratory irritation. |
| **Skin Contact** | May cause skin burns. |
| **Eye Contact** | May cause eye burns. |
| **Ingestion** | Causes burns of the mouth, throat and stomach. |
| **Aggravated Medical Conditions** | Skin disorders. |
| **Chronic Effects/Carcinogenicity** | Prolonged, excessive exposure may cause erosion of the teeth. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | LC50: 3124 ppm/1 hr. (Rat) |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Not determined |
| **Bio-accumulation** | Not determined |

### Ecotoxicological Information

| | |
|---|---|
| **Acute Fish Toxicity:** | Not determined |
| **Acute Crustaceans Toxicity:** | Not determined |
| **Acute Algae Toxicity:** | Not determined |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**

UN1789,Hydrochloric Acid Solution, 8, II

### Air Transportation

**ICAO/IATA**

UN1789,Hydrochloric Acid Solution, 8, IIRQ (Hydrochloric Acid - 2273 kg.)

### Sea Transportation

**IMDG**

UN1789,Hydrochloric Acid Solution, 8, IIRQ (Hydrochloric Acid - 2273 kg.)
EmS F-A, S-B

### Other Shipping Information

**Labels:** Corrosive

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** All components listed.
**US TSCA Inventory** All components listed on inventory or are exempt.
**EINECS Inventory** This product, and all its components, complies with EINECS

**Classification** C - Corrosive.

**Risk Phrases**
R34 Causes burns.
R37 Irritating to respiratory system.

**Safety Phrases**
S9 Keep container in a well ventilated place.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 In case of accident or if you feel unwell, seek medical advice immediately.
S1/2 Keep locked up and out of reach of children.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **TLC-W3 - ROCK SALT**

**Revision Date:** 04-Jan-2011

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** TLC-W3 - ROCK SALT
**Synonyms:** None
**Chemical Family:** Inorganic Salt
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Additive

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Sodium chloride | 7647-14-5 | 60 - 100% | Not applicable | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicty:** | 0 |
| **Body Contact:** | 0 |
| **Reactivity:** | 0 |
| **Chronic:** | 0 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** All standard fire fighting media

**Extinguishing media which must not be used for safety reasons** None known.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid creating or inhaling dust.

**Storage Information** Store in a cool, dry location. Product has a shelf life of 24 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

| | |
|---|---|
| **Respiratory Protection** | Not normally needed. But if significant exposures are possible then the following respirator is recommended:<br>Dust/mist respirator. (95%) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Solid |
| **Color:** | White |
| **Odor:** | Odorless |
| **pH:** | Not Determined |
| **Specific Gravity @ 20 C (Water=1):** | 2.16 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 58.44 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | None known. |
| **Hazardous Decomposition Products** | None known. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Inhalation** May cause respiratory irritation.

**Skin Contact** Prolonged or repeated contact may cause skin irritation.

**Eye Contact** May cause eye irritation.

**Ingestion** None known

**Aggravated Medical Conditions** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information** None known.

**Toxicity Tests**

**Oral Toxicity:** LD50: 3000 mg/kg (Rat)

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not applicable

**Bio-accumulation** Not determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components listed. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Not Classified |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **CLWGAU421**

**Revision Date:** 05-Sep-2012

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of NOHSC, Non-Dangerous Goods according to the criteria of ADG.

**Manufacturer/Supplier**

Halliburton/Baroid Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
New Zealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** CLWGAU421
**Synonyms:** None
**Chemical Family:** Carbohydrate
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Gelling Agent

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT | Australia NOHSC | New Zealand OEL | ACGIH TLV-TWA |
|---|---|---|---|---|---|
| Polysaccharide | | 60 - 100% | Not applicable | Not applicable | Not applicable |

**Non-Hazardous Substance to Total of 100%**

## 3. HAZARDS IDENTIFICATION

| | |
|---|---|
| **Hazard Overview** | May cause eye, skin, and respiratory irritation. Airborne dust may be explosive. |
| **Risk Phrases** | None |
| **HSNO Classification** | 9.1C Substances that are harmful in the aquatic environment. |

## 4. FIRST AID MEASURES

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Skin** | Wash with soap and water. Get medical attention if irritation persists. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |
| **Notes to Physician** | Not Applicable |

## 5. FIRE FIGHTING MEASURES

| | |
|---|---|
| **Suitable Extinguishing Media** | Water fog, carbon dioxide, foam, dry chemical. |
| **Extinguishing media which must not be used for safety reasons** | None known. |
| **Special Exposure Hazards** | Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential. |
| **Special Protective Equipment for Fire-Fighters** | Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel. |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautionary Measures** | Avoid creating and breathing dust. Slippery when wet. |
| **Environmental Precautionary Measures** | None known. |
| **Procedure for Cleaning / Absorption** | Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Wash hands after use. Launder contaminated clothing before reuse. Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid dust accumulations. Slippery when wet. Ground and bond containers when transferring from one container to another. |

**Storage Information** Store in a well ventilated area. Store away from oxidizers. Keep container closed when not in use. Store in a cool, dry location. Keep from heat, sparks, and open flames. Product has a shelf life of 24 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (95%)

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Powder |
| **Color:** | White to off white |
| **Odor:** | Odorless |
| **pH:** | 6.5-8 (1%) |
| **Specific Gravity @ 20 C (Water=1):** | 1.6 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | 750 |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | > 370 |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Forms gel |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None known. |
| **Incompatibility (Materials to Avoid)** | Strong oxidizers. |
| **Hazardous Decomposition Products** | Carbon monoxide and carbon dioxide. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | May cause mild respiratory irritation. In high air concentrations: May impede respiration. |
| **Skin Contact** | May cause an allergic skin reaction. Prolonged or repeated contact may cause skin irritation. |
| **Eye Contact** | May cause mild eye irritation. |
| **Ingestion** | May cause allergic reaction. |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Readily biodegradable |
| **Bio-accumulation** | Not determined |

## Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Transportation Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** All components listed on inventory or are exempt.
**New Zealand Inventory of Chemicals** All components listed on inventory or are exempt.
**US TSCA Inventory** All components listed on inventory or are exempt.
**EINECS Inventory** This product, and all its components, complies with EINECS

**Classification** Not Classified

**Risk Phrases** None

**Safety Phrases** None

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand National Poisons Centre**
0800 764 766

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **SAND - COMMON BROWN**

**Revision Date:** 05-Jan-2010

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** SAND - COMMON BROWN
**Synonyms:** None
**Chemical Family:** Sand
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Proppant

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 60 - 100% | 0.1 mg/m$^3$ | 0.025 mg/m$^3$ |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview**

**CAUTION! - ACUTE HEALTH HAZARD**
May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Unknown Aquatic Toxicty** | 0 |
| **Body Contact:** | 0 |
| **Reactivity:** | 0 |
| **Chronic:** | 4 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** None - does not burn.

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

| | |
|---|---|
| **Environmental Precautionary Measures** | None known. |
| **Procedure for Cleaning / Absorption** | Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet. |
| **Storage Information** | Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 36 months. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2. |
| **Respiratory Protection** | Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Solid |
| **Color:** | Brown |
| **Odor:** | Odorless |
| **pH:** | Not Determined |
| **Specific Gravity @ 20 C (Water=1):** | 2.63 - 2.67 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 0 |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Insoluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 65 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None known. |
| **Incompatibility (Materials to Avoid)** | Hydrofluoric acid. |
| **Hazardous Decomposition Products** | Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).<br><br>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below). |
| **Skin Contact** | None known. |
| **Eye Contact** | May cause mechanical irritation to eye. |
| **Ingestion** | None known |
| **Aggravated Medical Conditions** | Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust. |

**Chronic Effects/Carcinogenicity**

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information**

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997). |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not applicable

**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** Not determined

| | |
|---|---|
| **Acute Algae Toxicity:** | Not determined |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| **Disposal Method** | Bury in a licensed landfill according to federal, state, and local regulations. |
| **Contaminated Packaging** | Follow all applicable national or local regulations. |

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR**
Not restricted

### Air Transportation

**ICAO/IATA**
Not restricted

### Sea Transportation

**IMDG**
Not restricted

### Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | Not Determined |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Not Classified |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

# Tracerco T-140a

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4886-72**
Version No: **3.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-140a |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 2 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 490-97-1 | 10-30 | sodium 2-fluorobenzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-140a | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

### Respiratory protection

Continued...

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-140a

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |

Continued...

| | |
|---|---|
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | TOXICITY | IRRITATION |
|---|---|---|
| **Tracerco T-140a** | Not Available | Not Available |
| **sodium 2-fluorobenzoate** | Not Available | Not Available |
| **water** | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-140a** | Not available. |
| **SODIUM 2-FLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |

Continued...

| | | | |
|---|---|---|---|
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2-fluorobenzoate(490-97-1) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport |

Continued...

| | |
|---|---|
| | Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-140b

## Tracerco

Chemwatch Hazard Alert Code: **1**

Chemwatch: **4886-94**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-140b |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | **0** | |
| Toxicity | **1** | |
| Body Contact | **1** | |
| Reactivity | **0** | |
| Chronic | **0** | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification** | Not Applicable |

Continued...

### Label elements

| | |
|---|---|
| **GHS label elements** | Not Applicable |
| SIGNAL WORD | **NOT APPLICABLE** |

### Hazard statement(s)

Not Applicable

### Precautionary statement(s): Prevention

Not Applicable

### Precautionary statement(s): Response

Not Applicable

### Precautionary statement(s): Storage

Not Applicable

### Precautionary statement(s): Disposal

Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 499-57-0 | 1-10 | sodium 3-fluorobenzoate |
| 7732-18-5 | >60 | water |

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

Continued...

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

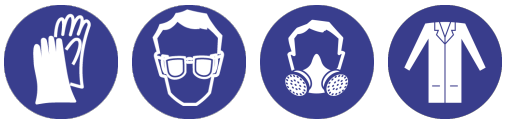
**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

Continued...

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-140b | Not Available | Not Available |

## Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-140b

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |

Continued...

| | | | |
|---|---|---|---|
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 90 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Not normally a hazard due to non-volatile nature of product<br>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

| | | |
|---|---|---|
| **Tracerco T-140b** | TOXICITY | IRRITATION |
| | Not Available | Not Available |

Continued...

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-140b** | Not available. |
| **SODIUM 3-FLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⊘ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ⊘ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ⊘ | **STOT - Single Exposure** | ⊘ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |

Continued...

| | |
|---|---|
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 3-fluorobenzoate(499-57-0) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-140c

## Tracerco

Chemwatch Hazard Alert Code: **1**

Chemwatch: **4886-95**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-140c |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | **0** | |
| Toxicity | **1** | |
| Body Contact | **1** | |
| Reactivity | **0** | |
| Chronic | **0** | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification** | Not Applicable |

Continued...

### Label elements

| | |
|---|---|
| **GHS label elements** | Not Applicable |
| SIGNAL WORD | **NOT APPLICABLE** |

### Hazard statement(s)

Not Applicable

### Precautionary statement(s): Prevention

Not Applicable

### Precautionary statement(s): Response

Not Applicable

### Precautionary statement(s): Storage

Not Applicable

### Precautionary statement(s): Disposal

Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 499-90-1 | 1-10 | sodium 4-fluorobenzoate |
| 7732-18-5 | >60 | water |

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

Continued...

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear breathing apparatus plus protective gloves in the event of a fire.<br>‣ Prevent, by any means available, spillage from entering drains or water courses.<br>‣ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ‣ Non combustible.<br>‣ Not considered to be a significant fire risk.<br>‣ Expansion or decomposition on heating may lead to violent rupture of containers.<br>‣ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ‣ Clean up all spills immediately.<br>‣ Avoid breathing vapours and contact with skin and eyes.<br>‣ Control personal contact with the substance, by using protective equipment.<br>‣ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>‣ Clear area of personnel.<br>‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Control personal contact with the substance, by using protective equipment as required. |
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ‣ Limit all unnecessary personal contact.<br>‣ Wear protective clothing when risk of exposure occurs.<br>‣ Use in a well-ventilated area.<br>‣ When handling **DO NOT** eat, drink or smoke. |
| **Other information** | ‣ Store in original containers.<br>‣ Keep containers securely sealed.<br>‣ Store in a cool, dry, well-ventilated area.<br>‣ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ‣ Polyethylene or polypropylene container.<br>‣ Packing as recommended by manufacturer.<br>‣ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

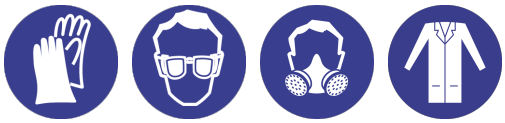
**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

Continued...

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-140c | Not Available | Not Available |

## Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-140c

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |

Continued...

| | | | |
|---|---|---|---|
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 90 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Not normally a hazard due to non-volatile nature of product<br>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

| | | |
|---|---|---|
| **Tracerco T-140c** | TOXICITY | IRRITATION |
| | Not Available | Not Available |

Continued...

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-140c** | Not available. |
| **SODIUM 4-FLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⊘ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ⊘ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ⊘ | **STOT - Single Exposure** | ⊘ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |

Continued...

| | |
|---|---|
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 4-fluorobenzoate(499-90-1) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-158a

## Tracerco

Chemwatch Hazard Alert Code: **1**

Chemwatch: **4886-96**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-158a |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 1 | |
| Body Contact | 1 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification** | Not Applicable |

Continued...

### Label elements

| | |
|---|---|
| **GHS label elements** | Not Applicable |
| SIGNAL WORD | NOT APPLICABLE |

### Hazard statement(s)

Not Applicable

### Precautionary statement(s): Prevention

Not Applicable

### Precautionary statement(s): Response

Not Applicable

### Precautionary statement(s): Storage

Not Applicable

### Precautionary statement(s): Disposal

Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 1765-08-8 | 1-10 | sodium 2,4-difluorobenzoate |
| 7732-18-5 | >60 | water |

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

Continued...

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear breathing apparatus plus protective gloves in the event of a fire.<br>‣ Prevent, by any means available, spillage from entering drains or water courses.<br>‣ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ‣ Non combustible.<br>‣ Not considered to be a significant fire risk.<br>‣ Expansion or decomposition on heating may lead to violent rupture of containers.<br>‣ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ‣ Clean up all spills immediately.<br>‣ Avoid breathing vapours and contact with skin and eyes.<br>‣ Control personal contact with the substance, by using protective equipment.<br>‣ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>‣ Clear area of personnel.<br>‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Control personal contact with the substance, by using protective equipment as required. |
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ‣ Limit all unnecessary personal contact.<br>‣ Wear protective clothing when risk of exposure occurs.<br>‣ Use in a well-ventilated area.<br>‣ When handling **DO NOT** eat, drink or smoke. |
| **Other information** | ‣ Store in original containers.<br>‣ Keep containers securely sealed.<br>‣ Store in a cool, dry, well-ventilated area.<br>‣ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ‣ Polyethylene or polypropylene container.<br>‣ Packing as recommended by manufacturer.<br>‣ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

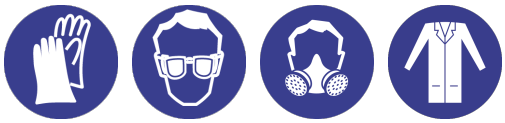
**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

Continued...

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-158a | Not Available | Not Available |

## Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-158a

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

## Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |

Continued...

| | | | |
|---|---|---|---|
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 90 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Not normally a hazard due to non-volatile nature of product<br>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

| | | |
|---|---|---|
| **Tracerco T-158a** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |

Continued...

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-158a** | Not available. |
| **SODIUM 2,4-DIFLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⊘ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ⊘ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ⊘ | **STOT - Single Exposure** | ⊘ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |

Continued...

| | |
|---|---|
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2,4-difluorobenzoate(1765-08-8) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-158b

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4886-97**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-158b |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 2 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 522651-42-9 | 10-30 | sodium 2,5-difluorobenzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-158b | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory

Continued...

Tracerco T-158b

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

Continued...

## Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | TOXICITY | IRRITATION |
|---|---|---|
| **Tracerco T-158b** | Not Available | Not Available |
| **sodium 2,5-difluorobenzoate** | Not Available | Not Available |
| **water** | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-158b** | Not available. |
| **SODIUM 2,5-DIFLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

Continued...

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2,5-difluorobenzoate(522651-42-9) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the

Continued...

Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-158c

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4886-98**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-158c |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 2 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 6185-28-0 | 10-30 | sodium 2,6-difluorobenzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-158c | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory

Continued...

Tracerco T-158c

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

Continued...

## Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | TOXICITY | IRRITATION |
|---|---|---|
| **Tracerco T-158c** | Not Available | Not Available |
| **sodium 2,6-difluorobenzoate** | Not Available | Not Available |
| **water** | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-158c** | Not available. |
| **SODIUM 2,6-DIFLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

Continued...

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2,6-difluorobenzoate(6185-28-0) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the

Continued...

Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-158d

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4886-99**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-158d |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | | Min | Max |
|---|---|---|---|
| Flammability | 0 | | |
| Toxicity | 2 | | |
| Body Contact | 2 | | |
| Reactivity | 0 | | |
| Chronic | 0 | | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 522651-44-1 | 10-30 | sodium 3,4-difluorobenzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-158d | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory

Continued...

Tracerco T-158d

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

Continued...

## Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | | |
|---|---|---|
| **Tracerco T-158d** | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| **sodium 3,4-difluorobenzoate** | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| **water** | TOXICITY | IRRITATION |
| | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-158d** | Not available. |
| **SODIUM 3,4-DIFLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

Continued...

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 3,4-difluorobenzoate(522651-44-1) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the

Continued...

Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-176c

## Tracerco

Chemwatch Hazard Alert Code: **1**

Chemwatch: **4888-07**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-176c |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**NON-HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | **0** | |
| Toxicity | **1** | |
| Body Contact | **1** | |
| Reactivity | **0** | |
| Chronic | **0** | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification** | Not Applicable |

Continued...

### Label elements

| | |
|---|---|
| **GHS label elements** | Not Applicable |
| SIGNAL WORD | NOT APPLICABLE |

### Hazard statement(s)

Not Applicable

### Precautionary statement(s): Prevention

Not Applicable

### Precautionary statement(s): Response

Not Applicable

### Precautionary statement(s): Storage

Not Applicable

### Precautionary statement(s): Disposal

Not Applicable

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 522651-48-5 | <10 | sodium 2,4,5-trifluorobenzoate |
| 7732-18-5 | >60 | water |

## SECTION 4 FIRST AID MEASURES

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

Continued...

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear breathing apparatus plus protective gloves in the event of a fire.<br>‣ Prevent, by any means available, spillage from entering drains or water courses.<br>‣ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ‣ Non combustible.<br>‣ Not considered to be a significant fire risk.<br>‣ Expansion or decomposition on heating may lead to violent rupture of containers.<br>‣ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ‣ Clean up all spills immediately.<br>‣ Avoid breathing vapours and contact with skin and eyes.<br>‣ Control personal contact with the substance, by using protective equipment.<br>‣ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>‣ Clear area of personnel.<br>‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Control personal contact with the substance, by using protective equipment as required. |
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ‣ Limit all unnecessary personal contact.<br>‣ Wear protective clothing when risk of exposure occurs.<br>‣ Use in a well-ventilated area.<br>‣ When handling **DO NOT** eat, drink or smoke. |
| **Other information** | ‣ Store in original containers.<br>‣ Keep containers securely sealed.<br>‣ Store in a cool, dry, well-ventilated area.<br>‣ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ‣ Polyethylene or polypropylene container.<br>‣ Packing as recommended by manufacturer.<br>‣ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

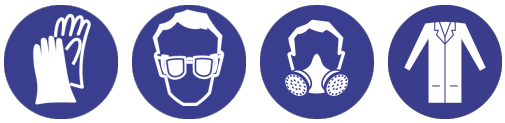
**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

Continued...

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-176c | Not Available | Not Available |

## Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | General exhaust is adequate under normal operating conditions. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-176c

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |

Continued...

| | | | |
|---|---|---|---|
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 90 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Not normally a hazard due to non-volatile nature of product<br>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. |

| | | |
|---|---|---|
| **Tracerco T-176c** | TOXICITY | IRRITATION |
| | Not Available | Not Available |

Continued...

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-176c** | Not available. |
| **SODIUM 2,4,5-TRIFLUOROBENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⦸ | **Carcinogenicity** | ⦸ |
| **Skin Irritation/Corrosion** | ⦸ | **Reproductivity** | ⦸ |
| **Serious Eye Damage/Irritation** | ⦸ | **STOT - Single Exposure** | ⦸ |
| **Respiratory or Skin sensitisation** | ⦸ | **STOT - Repeated Exposure** | ⦸ |
| **Mutagenicity** | ⦸ | **Aspiration Hazard** | ⦸ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |

Continued...

| | |
|---|---|
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2,4,5-trifluorobenzoate(522651-48-5) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-190a

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4888-08**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-190a |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 2 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 2966-44-1 | 10-30 | sodium 2-(trifluoromethyl)benzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-190a | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

### Respiratory protection

Continued...

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-190a

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |

Continued...

| | |
|---|---|
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | TOXICITY | IRRITATION |
|---|---|---|
| **Tracerco T-190a** | Not Available | Not Available |
| **sodium 2-(trifluoromethyl)benzoate** | Not Available | Not Available |
| **water** | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-190a** | Not available. |
| **SODIUM 2-(TRIFLUOROMETHYL)BENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |

Continued...

| | | | |
|---|---|---|---|
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 2-(trifluoromethyl)benzoate(2966-44-1) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not |

Continued...

| | |
|---|---|
| | apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-190b

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4888-09**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-190b |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | Min | Max |
|---|---|---|
| Flammability | 0 | |
| Toxicity | 2 | |
| Body Contact | 2 | |
| Reactivity | 0 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 69226-41-1 | 10-30 | sodium 3-(trifluoromethyl)benzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-190b | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

### Respiratory protection

Continued...

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-190b

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |

Continued...

| | |
|---|---|
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | | |
|---|---|---|
| **Tracerco T-190b** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **sodium 3-(trifluoromethyl)benzoate** | **TOXICITY** | **IRRITATION** |
| | Subcutaneous (Frog) LD50: 848 mg/kg | |
| | Not Available | Not Available |
| **water** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-190b** | Not available. |
| **SODIUM 3-(TRIFLUOROMETHYL)BENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

Continued...

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 3-(trifluoromethyl)benzoate(69226-41-1) is found on the following regulatory lists** | |

Continued...

| | |
|---|---|
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-190c

## Tracerco

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4888-10**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-190c |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | | Min | Max |
|---|---|---|---|
| Flammability | 0 | | |
| Toxicity | 2 | | |
| Body Contact | 2 | | |
| Reactivity | 0 | | |
| Chronic | 0 | | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H302** | Harmful if swallowed |
| **H332** | Harmful if inhaled |
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P270** | Do not eat, drink or smoke when using this product. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P301+P312** | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 25832-58-0 | 10-30 | sodium 4-(trifluoromethyl)benzoate |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. |

Continued...

| | |
|---|---|
| | ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |

Continued...

| | |
|---|---|
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-190c | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

### Respiratory protection

Continued...

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-190c

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |

Continued...

| | |
|---|---|
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | TOXICITY | IRRITATION |
|---|---|---|
| **Tracerco T-190c** | Not Available | Not Available |
| **sodium 4-(trifluoromethyl)benzoate** | Not Available | Not Available |
| **water** | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-190c** | Not available. |
| **SODIUM 4-(TRIFLUOROMETHYL)BENZOATE** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✔ | **Carcinogenicity** | ⊘ |

Continued...

| | | | |
|---|---|---|---|
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **sodium 4-(trifluoromethyl)benzoate(25832-58-0) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not |

Continued...

| | |
|---|---|
| | apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# Tracerco T-194a

**Tracerco**

Chemwatch Hazard Alert Code: **2**

Chemwatch: **4888-11**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **25/02/2014**
Print Date: **16/05/2014**
Initial Date: **Not Available**
S.GHS.AUS.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

### Product Identifier

| | |
|---|---|
| **Product name** | Tracerco T-194a |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Not Applicable |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |
| **CAS number** | Not Applicable |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Details of the supplier of the safety data sheet

| | | | |
|---|---|---|---|
| **Registered company name** | Tracerco | | |
| **Address** | 2 Harris Road Malaga 6090 WA Australia | | |
| **Telephone** | +61 8 9209 3905 | | |
| **Fax** | +61 8 9209 3725 | | |
| **Website** | www.tracerco.com | | |
| **Email** | admin.aus@tracerco.com | | |

### Emergency telephone number

| | | | |
|---|---|---|---|
| **Association / Organisation** | Not Available | | |
| **Emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |
| **Other emergency telephone numbers** | +61 8 9209 3905 (9am-5pm) | | |

## SECTION 2 HAZARDS IDENTIFICATION

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.**

#### CHEMWATCH HAZARD RATINGS

| | | Min | Max |
|---|---|---|---|
| Flammability | 0 | | |
| Toxicity | 1 | | |
| Body Contact | 2 | | |
| Reactivity | 0 | | |
| Chronic | 0 | | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **GHS Classification [1]** | Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3 |

Continued...

| | |
|---|---|
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI* |

## Label elements

| | |
|---|---|
| **GHS label elements** |  |
| **SIGNAL WORD** | **WARNING** |

## Hazard statement(s)

| | |
|---|---|
| **H315** | Causes skin irritation |
| **H319** | Causes serious eye irritation |
| **H335** | May cause respiratory irritation |

## Precautionary statement(s): Prevention

| | |
|---|---|
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P261** | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection. |

## Precautionary statement(s): Response

| | |
|---|---|
| **P321** | Specific treatment (see advice on this label). |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P312** | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |

## Precautionary statement(s): Storage

| | |
|---|---|
| **P405** | Store locked up. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

## Precautionary statement(s): Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration |

# SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

## Substances

See section below for composition of Mixtures

## Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 67852-79-3 | 10-30 | 2,3,4,5-tetrafluorobenzoic acid, sodium |
| 7732-18-5 | >60 | water |

# SECTION 4 FIRST AID MEASURES

## Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available). |

Continued...

| | |
|---|---|
| | ▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ If swallowed do **NOT** induce vomiting.<br>▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.<br>▸ Observe the patient carefully.<br>▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.<br>▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.<br>▸ Seek medical advice. |

### Indication of any immediate medical attention and special treatment needed

| | |
|---|---|
| | Treat symptomatically. |

## SECTION 5 FIREFIGHTING MEASURES

### Extinguishing media

| | |
|---|---|
| | ▸ There is no restriction on the type of extinguisher which may be used.<br>▸ Use extinguishing media suitable for surrounding area. |

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | None known. |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use fire fighting procedures suitable for surrounding area. |
| **Fire/Explosion Hazard** | ▸ Non combustible.<br>▸ Not considered to be a significant fire risk.<br>▸ Expansion or decomposition on heating may lead to violent rupture of containers.<br>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO). |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required. |

| | |
|---|---|
| | Personal Protective Equipment advice is contained in Section 8 of the MSDS. |

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Limit all unnecessary personal contact.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ When handling **DO NOT** eat, drink or smoke. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers. |

### Conditions for safe storage, including any incompatibilities

Continued...

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | None known |

**PACKAGE MATERIAL INCOMPATIBILITIES**

Not Available

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient | TEEL-0 | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| water | 500(ppm) | 500(ppm) | 500(ppm) | 500(ppm) |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Tracerco T-194a | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. |
| **Personal protection** |  |
| **Eye and face protection** | Safety glasses with side shields.<br>Chemical goggles.<br>Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. |
| **Skin protection** | See Hand protection below |
| **Hand protection** | The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final choice.<br>Suitability and durability of glove type is dependent on usage. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ Eyewash unit. |
| **Thermal hazards** | Not Available |

### Recommended material(s)

**GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the:
***"Forsberg Clothing Performance Index".***
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Tracerco T-194a

### Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter;

Continued...

| Material | CPI |
|---|---|
| BUTYL | A |
| NEOPRENE | A |
| VITON | A |

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
**NOTE**: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | -AUS P2 | - | -PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | -AUS / Class 1 P2 | - |
| up to 100 x ES | - | -2 P2 | -PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Liquid; mixes with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Applicable |
| **pH (as supplied)** | Not Available | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | Not Applicable | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Applicable | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Applicable | **Volatile Component (%vol)** | 80 |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Miscible | **pH as a solution(1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | Product is considered stable and hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

Continued...

| | |
|---|---|
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. |
| **Ingestion** | Accidental ingestion of the material may be damaging to the health of the individual.<br>Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. |
| **Eye** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. |

| | | |
|---|---|---|
| **Tracerco T-194a** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **2,3,4,5-tetrafluorobenzoic acid, sodium** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **water** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |

** Value obtained from manufacturer's msds*
*unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances*

| | |
|---|---|
| **Tracerco T-194a** | Not available. |
| **2,3,4,5-TETRAFLUOROBENZOIC ACID, SODIUM** | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| **WATER** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⊘ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ✔ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ✔ | **STOT - Single Exposure** | ✔ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

Continued...

### CMR STATUS

Not Applicable

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| Not Available | Not Available | Not Available |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| Not Available | Not Available |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| Not Available | Not Available |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.<br>▸ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).<br>▸ Decontaminate empty containers. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

## SECTION 15 REGULATORY INFORMATION

### Safety, health and environmental regulations / legislation specific for the substance or mixture

| | |
|---|---|
| **2,3,4,5-tetrafluorobenzoic acid, sodium(67852-79-3) is found on the following regulatory lists** | |
| **water(7732-18-5) is found on the following regulatory lists** | "WHO Model List of Essential Medicines - Adults","Australia Inventory of Chemical Substances (AICS)","OECD List of High Production Volume (HPV) Chemicals","OSPAR National List of Candidates for Substitution – Norway","IMO IBC Code Chapter 18: List of products to which the Code does not apply","Sigma-AldrichTransport Information","Australia High Volume Industrial Chemical List (HVICL)","International Fragrance Association (IFRA) Survey: Transparency List" |

## SECTION 16 OTHER INFORMATION

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

Continued...

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 300

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

The product has been classified according to the legislation in force.

**Classification:** | Xi; R36/37/38 |

The full text for all R-phrases is displayed in Section 16.

**Potential health effects**

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not

exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 300 | | | >= 99% | Xi;R36/37/38 | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The full text for all R-phrases is displayed in Section 16.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**Skin contact:** Wash contact areas with soap and water. Get medical attention promptly if symptoms occur after washing.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by

permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Wear approved safety glasses or goggles.

**Hand protection:** Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** Wear suitable protective clothing.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** Odourless
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 45°C (113°F)
**Relative density:** 1.6
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.

**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Strong oxidising agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** The product is insoluble in water.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 08*

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

Irritant.

R36/37/38; Irritating to eyes, respiratory system and skin.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** R36; Irritating to eyes. R37; Irritating to respiratory system. R38; Irritating to skin.

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1015390
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 300a

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 300a | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 48°C (118°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Insoluble
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.

**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1014904
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 350

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 350 | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Rinse mouth thoroughly. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 76°C (169°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** No data available.
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.

**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1014908
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 400b

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

The product has been classified according to the legislation in force.

**Classification:** | Xi; R36/37/38 |

The full text for all R-phrases is displayed in Section 16.

**Potential health effects**

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not

exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 400b | | | >= 99% | Xi;R36/37/38 | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The full text for all R-phrases is displayed in Section 16.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**Skin contact:** Wash contact areas with soap and water. Get medical attention promptly if symptoms occur after washing.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by

permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Wear approved safety glasses or goggles.

**Hand protection:** Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** Wear suitable protective clothing.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Pale yellow
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** -55°C (-67°F)
**Freezing point:** No data available.
**Boiling Point:** 101°C (214°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.

**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Strong oxidising agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** The product is insoluble in water.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 08*

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

Irritant.

R36/37/38; Irritating to eyes, respiratory system and skin.

S23; Do not breathe vapor or spray. S24/25; Avoid contact with skin and eyes. S26; In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S60; This material and its container must be disposed of as hazardous waste.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** R36; Irritating to eyes. R37; Irritating to respiratory system. R38; Irritating to skin.

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:** 21-Aug-2008
**SDS No.:** 1014943
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 400c

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

The product has been classified according to the legislation in force.

**Classification:** | Xi; R36/37/38 |

The full text for all R-phrases is displayed in Section 16.

**Potential health effects**

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not

exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 400c | | | >= 99% | Xi;R36/37/38 | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The full text for all R-phrases is displayed in Section 16.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**Skin contact:** Wash contact areas with soap and water. Get medical attention promptly if symptoms occur after washing.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by

permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Wear approved safety glasses or goggles.

**Hand protection:** Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** Wear suitable protective clothing.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** No data available.
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** No data available.
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.

**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Strong oxidising agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** Irritating to respiratory system.

**Eye contact:** Irritating to eyes. Eye may become red, tear, and become painful.

**Skin contact:** Irritating to skin. May cause pain, redness and itching.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** The product is insoluble in water.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 08*

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

Irritant.

R36/37/38; Irritating to eyes, respiratory system and skin.

S23; Do not breathe vapor or spray. S24/25; Avoid contact with skin and eyes. S26; In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S60; This material and its container must be disposed of as hazardous waste.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** R36; Irritating to eyes. R37; Irritating to respiratory system. R38; Irritating to skin.

**Inventory status:** Not all substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1014960
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 412

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 412 | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** Odourless
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 121°C (250°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.

**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** Not all substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1015406
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 438

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 438 | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** No data available.
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** No data available.
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.

**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** Not all substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1015436
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 450a

**Supplier:**
Tracerco
PO Box 1
Hall Technology Park
Cleveland
1LB
Belasis
Billingham
TS23
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 450a | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Rinse mouth thoroughly. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** No data available.
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** No data available.
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Insoluble
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** No data available.
**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidising materials.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**

**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** Not all substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1014967
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 450b

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 450b | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** Odourless
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 130°C (266°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** 2 mPa.s (Approximate)
**Flash point:** No data available.

**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Potassium Sodium. Lithium. Calcium. Barium.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** Not all substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1015419
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 450c

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

Not classified as dangerous according to directive 1999/45/EC. The toxicological properties of this compound have not been fully investigated.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** This product is not flammable.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 450c | | | >= 99% | - | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Rinse mouth thoroughly. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Avoid inhalation of vapours and spray mist and contact with skin and eyes. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Store in closed original container in a dry place. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** Odourless
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** No data available.
**Freezing point:** No data available.
**Boiling Point:** 127°C (261°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** No data available.
**Evaporation rate:** No data available.
**Solubility in water:** Not miscible
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** 2.28 mPa.s
**Flash point:** No data available.

**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Potassium Sodium. Lithium. Calcium. Barium.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 09

## 14 TRANSPORT INFORMATION

**ADR/RID** Not regulated.

**IMDG** Not regulated.

**IATA** Not regulated.

## 15 REGULATORY INFORMATION

The product has not been classified as dangerous according to the legislation in force.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** None

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1015373
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

# SAFETY DATA SHEET

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name:** 462a

**Supplier:**
Tracerco
PO Box 1
Belasis Hall Technology Park
Billingham
Cleveland
TS23 1LB
UK
Tel: +44 (0)1642 375500 Fax: +44 (0)1642 370704
www.tracerco.com

**Emergency telephone:**
+44 (0)1642 375500

**Intended use:** Diagnostic services

**Contact person:**
Peter.Scaife@matthey.com

## 2 HAZARDS IDENTIFICATION

The product has been classified according to the legislation in force.

**Classification:** | R10 |

The full text for all R-phrases is displayed in Section 16.

**Potential health effects**

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Other health effects:** The toxicological properties of this compound have not been fully investigated.

**Potential physical / chemical effects:** The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures.

**Environment:** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical name | EC No. | CAS-No. | Concentration * | Classification | Notes |
|---|---|---|---|---|---|
| 462a | | | >= 99% | R10 | - |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4 FIRST-AID MEASURES

**General:** Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

**Inhalation:** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Skin contact:** Wash contact areas with soap and water.

**Ingestion:** Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

**Extinguishing media:** Extinguish with foam, carbon dioxide, dry powder or water fog.

**Inappropriate extinguishing media:** Not applicable.

**Special fire fighting procedures:** Use standard firefighting procedures and consider the hazards of other involved materials.

**Unusual fire & explosion hazards:** During fire, gases hazardous to health may be formed.

**Hazardous combustion products:** Carbon oxides, Hydrogen fluoride

**Protective measures:** Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Do not smoke, use open fire or other sources of ignition. Avoid inhalation of vapours and spray mist and contact with skin and eyes. Provide adequate ventilation. Wear suitable protective clothing. See Section 8 for personal protective equipment.

**Spill cleanup methods:** Remove sources of ignition. Beware of the explosion danger. Absorb in vermiculite, dry sand or earth and place into containers. For waste disposal, see section 13.

**Environmental precautions:** Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

**Notification procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

## 7 HANDLING AND STORAGE

**Handling:** Local exhaust is recommended. Avoid inhalation of vapours and spray mist and contact with skin and eyes. Do not smoke and do not spray near a naked flame or other sources of ignition. The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures. Wear appropriate personal protective equipment. See Section 8 for personal protective equipment.

**Storage:** Follow rules for flammable liquids. Keep away from heat, sparks and open flame. Store in a cool and well-ventilated place. Keep containers tightly closed. Store away from incompatible materials.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limit values:** No exposure limits noted for ingredient(s).

**Engineering controls:** Use explosion-proof ventilation equipment. Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator. Use respiratory equipment with combination filter, type A2/P2. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye protection:** Risk of contact: Wear approved safety glasses or goggles.

**Hand protection:** Risk of contact: Wear protective gloves. Neoprene, nitrile, polyethylene or PVC. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Skin protection:** If prolonged or repeated contact is likely, chemical resistant clothing is recommended.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid
**Colour:** Colourless
**Odour:** No data available.
**Odour threshold:** No data available.
**pH:** Not applicable
**Melting point:** -10°C (14°F)
**Freezing point:** No data available.

**Boiling Point:** 142°C (288°F)
**Relative density:** No data available.
**Vapour pressure:** No data available.
**Vapour density (air=1):** 17.5
**Evaporation rate:** No data available.
**Solubility in water:** No data available.
**Solubility (other):** No data available.
**Partition coefficient (n-octanol/water):** No data available.
**Viscosity:** Not applicable
**Flash point:** 48°C (118°F)
**Autoignition temperature:** No data available.
**Flammability limit - lower(%):** No data available.
**Flammability limit - upper (%):** No data available.

## 10 STABILITY AND REACTIVITY

**Stability:** This product is stable under expected conditions of use.

**Conditions to avoid:** Heat, sparks, flames.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:**

| | |
|---|---|
| At elevated temperatures: | Carbon oxides, Hydrogen fluoride |

**Possibility of hazardous reactions:** Will not occur.

## 11 TOXICOLOGICAL INFORMATION

**Inhalation:** In high concentrations, vapours may be irritating to the respiratory system.

**Eye contact:** May cause minor irritation on eye contact.

**Skin contact:** Mildly irritating to skin with prolonged exposure.

**Ingestion:** May cause discomfort if swallowed.

**Sensitisation:** None known.

**Listed carcinogens:** None

**Mutagenesis:** No data available.

**Reproductive toxicity:** No data available.

**Other effects:** The toxicological properties of this compound have not been fully investigated.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** The product components are not classified as environmentally hazardous. However, this does not

exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Mobility:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulation potential:** No data available.

## 13 DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements.

**European waste codes**
**Unused product:** 16 05 08*

## 14 TRANSPORT INFORMATION

**ADR/RID**
**UN No.:** UN1993
**Proper shipping name:** Flammable liquid, n.o.s. (Perfluorodecalin)
**Class:** 3
**Packing group:** III
**Label(s):** 3

**IMDG**
**UN No.:** UN1993
**Proper shipping name:** Flammable liquid, n.o.s. (Perfluorodecalin )
**Class:** 3
**Packing group:** III
**EmS No.:** F-E, S-E

**IATA**
**UN No.:** UN1993
**Proper shipping name:** Flammable liquid, n.o.s. ( Perfluorodecalin )
**Class:** 3
**Packing group:** III
**Label(s):** 3

## 15 REGULATORY INFORMATION

R10; Flammable.

S23; Do not breathe vapor or spray. S24/25; Avoid contact with skin and eyes.

## 16 OTHER INFORMATION

**Wording of the R-phrases in sections 2 and 3:** R10; Flammable.

**Inventory status:** All substances are listed on EINECS.

**Issue date:** 21-Aug-2008
**Supercedes date:**
**SDS No.:** 1014900
**Disclaimer:** This MSDS has been prepared using information from sources considered technically reliable. It should not be relied upon as a product specification. The company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other chemical substances. Every user of the product is responsible for evaluating its own processes and conditions of use and selecting appropriate protective measures for employee exposure.

**MANUFACTURER**
**SPECTRATEK SERVICES**
**2726 AZTEC N.E. BUILDING B**
**ALBUQUERQUE, NM 87107**
**PHONE : (505) 888-0144**
**24 HOUR EMERGENCY RESPONSE:**
**(Within US) 1 800 535 5053 (Outside US) 1 352 323 3500 Collect**

**Rev. 4/20/09**

# MATERIAL SAFETY DATA SHEET

## IDENTIFICATION

| | |
|---|---|
| PRODUCT NAME | **IRIDIUM ZERO WASH® BEAD TRACER** |
| RADIONUCLIDE | **IRIDIUM-192 (IR-192)** |
| CHEMICAL FORM | **IRIDIUM OXIDE** |
| PHYSICAL FORM | **SOLID** |

## TOXICITY HAZARDS

IRIDIUM 192 Bead Tracer has short term toxicity hazards if ingested. Data on lethal concentrations and doses are not presently available.

## HEALTH HAZARD DATA

***ACUTE EFFECTS***

May cause Eye and Mucous membrane irritation.
ZERO WASH particle is too large to inhale. Ingestion is the only method of internal consumption.

**PREGNANT WOMEN SHOULD NOT BE ALLOWED TO WORK WITH RADIOACTIVE MATERIAL OR BE IN THE EXPOSURE AREA.**

***FIRST AID***

**IF SWALLOWED, OBTAIN COMPETENT MEDICAL ATTENTION IMMEDIATELY.** The physician should be qualified in Nuclear Medicine and/or Health Physics.

In case of skin contact, wash area with water and a detergent. SURVEY skin area with a Geiger-Mueller instrument and end-window G-M probe to determine cleaning effectiveness. Survey all personnel who may have come in contact with ZERO WASH Bead Tracer. Locate the ZERO WASH bead using GM survey instrument. Use adhesive tape to remove bead from clothing. Treat tape containing bead as RAD WASTE. If numerous beads are found on clothing, remove and place in a container for later cleaning or disposal. SURVEY THE AREA near the spill and the areas the worker has been transferred to for the presence of radioactive material.

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure that adequate flushing occurs by separating eyelids with fingers. Obtain services of a qualified physician.

## PHYSICAL DATA

| | |
|---|---|
| SPECIFIC GRAVITY | 1.25 grams/ml - Low Density ZERO WASH bead |
| | 2.65 grams/ml - ZERO WASH bead |

| | |
|---|---|
| WASHOFF | < 0.005% Washoff |
| APPEARANCE | black/dark brown (low density ZW) and gray to beige spheres (ZW) |
| ODOR | no odor |
| HALF LIFE | 74.2 Days |

## FIRE AND EXPLOSION HAZARD DATA

Fire and Explosion Hazard is Negligible
Autoignition Temperature not Applicable
EXTINGUISHING MEDIA - Carbon Dioxide or Halon (This reduces the spread of radioactive material).

***SPECIAL FIRE FIGHTING PROCEDURES***
Self Contained Breathing Apparatus and fire protective clothing is sufficient when extinguishing a fire involving this product.

***UNUSUAL FIRE AND EXPLOSION HAZARDS***
NONE

## REACTIVITY DATA

STABILITY - STABLE
CONDITION TO AVOID - NONE
INCOMPATIBILITIES - NONE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS – IRIDIUM 192 MAY CONTAIN VAPORS OR PARTICULATES

HAZARDOUS POLYMERIZATIONS - NONE

## SPILL AND LEAK PROCEDURES

***SPILL PROCEDURES***
CONTROL THE AREA. Do Not Move Personnel from the area until they have been surveyed using a G-M survey instrument. The personnel may survey themselves and if no radioactive material is indicated they may leave the area. This will help eliminate spread of radioactive material. **WEAR PROTECTIVE CLOTHING, SAFETY EYEWEAR, IMPERVIOUS BOOTS, AND RUBBER GLOVES.** Clean up spill area by scooping up spilled material and transfer to a container. It may be necessary to remove some soil or other items indicating the presence of radioactive material. If clothing indicates the presence of radioactive material, remove the bead with adhesive tape, hold tape containing bead for decay in proper storage area and treat as RAD WASTE. If numerous beads are found on clothing, remove clothing and place in a container for later cleaning or disposal. Contain all spilled material and treat as radioactive waste as per regulatory requirements.

**MANUFACTURER**
**SPECTRATEK SERVICES**
**2726 AZTEC N.E. BUILDING B**
**ALBUQUERQUE, NM 87107**
**PHONE : (505) 888-0144**
**24 HOUR EMERGENCY RESPONSE:**
**(Within US) 1 800 535 5053 (Outside US) 1 352 323 3500 Collect**

**Rev. 4/20/09**

# MATERIAL SAFETY DATA SHEET

## IDENTIFICATION

| | |
|---|---|
| PRODUCT NAME | **ANTIMONY ZERO WASH® BEAD TRACER** |
| RADIONUCLIDE | **ANTIMONY-124 (Sb-124)** |
| CHEMICAL FORM | **ANTIMONY OXIDE** |
| PHYSICAL FORM | **SOLID** |

## TOXICITY HAZARDS

ANTIMONY 124 Bead Tracer has short term toxicity hazards if ingested. Data on lethal concentrations and doses are not presently available.

## HEALTH HAZARD DATA

***ACUTE EFFECTS***

May cause Eye and Mucous membrane irritation.
ZERO WASH particle is too large to inhale. Ingestion is the only method of internal consumption.

**PREGNANT WOMEN SHOULD NOT BE ALLOWED TO WORK WITH RADIOACTIVE MATERIAL OR BE IN THE EXPOSURE AREA.**

***FIRST AID***

**IF SWALLOWED, OBTAIN COMPETENT MEDICAL ATTENTION IMMEDIATELY.** The physician should be qualified in Nuclear Medicine and/or Health Physics.

In case of skin contact, wash area with water and a detergent. SURVEY skin area with a Geiger-Mueller instrument and end-window G-M probe to determine cleaning effectiveness. Survey all personnel who may have come in contact with ZERO WASH Bead Tracer. Locate the ZERO WASH bead using GM survey instrument. Use adhesive tape to remove bead from clothing. Treat tape containing bead as RAD WASTE. If numerous beads are found on clothing, remove and place in a container for later cleaning or disposal. SURVEY THE AREA near the spill and the areas the worker has been transferred to for the presence of radioactive material.

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure that adequate flushing occurs by separating eyelids with fingers. Obtain services of a qualified physician.

## PHYSICAL DATA

| | |
|---|---|
| SPECIFIC GRAVITY | 1.25 grams/ml - Low Density ZERO WASH bead |
| | 2.65 grams/ml - ZERO WASH bead |

| | |
|---|---|
| WASHOFF | < 0.1% Washoff |
| APPEARANCE | black/dark brown (low density ZW) and gray to beige spheres (ZW) |
| ODOR | no odor |
| HALF LIFE | 60.4 Days |

## FIRE AND EXPLOSION HAZARD DATA

Fire and Explosion Hazard is Negligible
Autoignition Temperature not Applicable
EXTINGUISHING MEDIA - Carbon Dioxide or Halon (This reduces the spread of radioactive material).

***SPECIAL FIRE FIGHTING PROCEDURES***
Self Contained Breathing Apparatus and fire protective clothing is sufficient when extinguishing a fire involving this product.

***UNUSUAL FIRE AND EXPLOSION HAZARDS***
NONE

## REACTIVITY DATA

STABILITY - STABLE
CONDITION TO AVOID - NONE
INCOMPATIBILITIES - NONE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS – IRIDIUM 192 MAY CONTAIN VAPORS OR PARTICULATES

HAZARDOUS POLYMERIZATIONS - NONE

## SPILL AND LEAK PROCEDURES

***SPILL PROCEDURES***
CONTROL THE AREA. Do Not Move Personnel from the area until they have been surveyed using a G-M survey instrument. The personnel may survey themselves and if no radioactive material is indicated they may leave the area. This will help eliminate spread of radioactive material. **WEAR PROTECTIVE CLOTHING, SAFETY EYEWEAR, IMPERVIOUS BOOTS, AND RUBBER GLOVES.** Clean up spill area by scooping up spilled material and transfer to a container. It may be necessary to remove some soil or other items indicating the presence of radioactive material. If clothing indicates the presence of radioactive material, remove the bead with adhesive tape, hold tape containing bead for decay in proper storage area and treat as RAD WASTE. If numerous beads are found on clothing, remove clothing and place in a container for later cleaning or disposal. Contain all spilled material and treat as radioactive waste as per regulatory requirements.

**MANUFACTURER**
**SPECTRATEK SERVICES**
**2726 AZTEC N.E. BUILDING B**
**ALBUQUERQUE, NM 87107**
**PHONE : (505) 888-0144**
**24 HOUR EMERGENCY RESPONSE:**
**(Within US) 1 800 535 5053 (Outside US) 1 352 323 3500 Collect**

**Rev. 4/20/09**

# MATERIAL SAFETY DATA SHEET

## IDENTIFICATION

| | |
|---|---|
| PRODUCT NAME | **SCANDIUM ZERO WASH® BEAD TRACER** |
| RADIONUCLIDE | **SCANDIUM-46 (Sc-46)** |
| CHEMICAL FORM | **SCANDIUM OXIDE** |
| PHYSICAL FORM | **SOLID** |

## TOXICITY HAZARDS

SCANDIUM 46 Bead Tracer has short term toxicity hazards if ingested. Data on lethal concentrations and doses are not presently available.

## HEALTH HAZARD DATA

***ACUTE EFFECTS***

May cause Eye and Mucous membrane irritation.
ZERO WASH particle is too large to inhale. Ingestion is the only method of internal consumption.

**PREGNANT WOMEN SHOULD NOT BE ALLOWED TO WORK WITH RADIOACTIVE MATERIAL OR BE IN THE EXPOSURE AREA.**

***FIRST AID***

**IF SWALLOWED, OBTAIN COMPETENT MEDICAL ATTENTION IMMEDIATELY.** The physician should be qualified in Nuclear Medicine and/or Health Physics.

In case of skin contact, wash area with water and a detergent. SURVEY skin area with a Geiger-Mueller instrument and end-window G-M probe to determine cleaning effectiveness. Survey all personnel who may have come in contact with ZERO WASH Bead Tracer. Locate the ZERO WASH bead using GM survey instrument. Use adhesive tape to remove bead from clothing. Treat tape containing bead as RAD WASTE. If numerous beads are found on clothing, remove and place in a container for later cleaning or disposal. SURVEY THE AREA near the spill and the areas the worker has been transferred to for the presence of radioactive material.

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure that adequate flushing occurs by separating eyelids with fingers. Obtain services of a qualified physician.

## PHYSICAL DATA

| | |
|---|---|
| SPECIFIC GRAVITY | 1.25 grams/ml - Low Density ZERO WASH bead |
| | 2.65 grams/ml - ZERO WASH bead |
| WASHOFF | < 0.005% Washoff |
| APPEARANCE | black/dark brown (low density ZW) and gray to beige spheres (ZW) |
| ODOR | no odor |
| HALF LIFE | 84 Days |

## FIRE AND EXPLOSION HAZARD DATA

Fire and Explosion Hazard is Negligible
Autoignition Temperature not Applicable
EXTINGUISHING MEDIA - Carbon Dioxide or Halon (This reduces the spread of radioactive material).

***SPECIAL FIRE FIGHTING PROCEDURES***
Self Contained Breathing Apparatus and fire protective clothing is sufficient when extinguishing a fire involving this product.

***UNUSUAL FIRE AND EXPLOSION HAZARDS***
NONE

## REACTIVITY DATA

STABILITY - STABLE
CONDITION TO AVOID - NONE
INCOMPATIBILITIES - NONE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS – IRIDIUM 192 MAY CONTAIN VAPORS OR PARTICULATES

HAZARDOUS POLYMERIZATIONS - NONE

## SPILL AND LEAK PROCEDURES

***SPILL PROCEDURES***
CONTROL THE AREA. Do Not Move Personnel from the area until they have been surveyed using a G-M survey instrument. The personnel may survey themselves and if no radioactive material is indicated they may leave the area. This will help eliminate spread of radioactive material. **WEAR PROTECTIVE CLOTHING, SAFETY EYEWEAR, IMPERVIOUS BOOTS, AND RUBBER GLOVES.** Clean up spill area by scooping up spilled material and transfer to a container. It may be necessary to remove some soil or other items indicating the presence of radioactive material. If clothing indicates the presence of radioactive material, remove the bead with adhesive tape, hold tape containing bead for decay in proper storage area and treat as RAD WASTE. If numerous beads are found on clothing, remove clothing and place in a container for later cleaning or disposal. Contain all spilled material and treat as radioactive waste as per regulatory requirements.

**SDS no.** D176
**Version** 10
**Revision date** 17-Jul-2018
**Supersedes Date:** 31-Jul-2015

# Safety Data Sheet
## High Temperature Expanding Additive D176

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** High Temperature Expanding Additive D176
**Product code** D176

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Magnesium oxide

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Magnesium oxide | 215-171-9 | 1309-48-4 | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**3.2 Mixtures**

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Do not breathe dust. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid dust formation Avoid contact with: Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Magnesium oxide | 10 mg/m³ TWA | 10mg/m³TWAfume | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Magnesium oxide | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Magnesium oxide | Not determined | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Magnesium oxide | 10 mg/m³ TWA | 15 mg/m³ TWA | 4 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Magnesium oxide | Not determined | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Butyl Rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules |
| **Odor** | Odorless |
| **Color** | Light yellow Brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 10.5 | @ 10% (H2O) |
| **Melting / freezing point** | >2093 °C/ 3799 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |

| | |
|---|---|
| **Specific gravity** | 3.19 g/cm³ |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation.

**10.5 Incompatible materials**

Strong acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Magnesium oxide | No data available | No data available | No data available |
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Magnesium oxide | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Magnesium oxide | Inorganic compound |
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Magnesium oxide | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Magnesium oxide | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Magnesium oxide | No information available |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 31-Jul-2015 |
| **Revision date** | 17-Jul-2018 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

HALLIBURTON

# SAFETY DATA SHEET

# BARITE

**Revision Date:** 08-Jan-2019 **Revision Number:** 53

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARITE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000105

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Weight Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Carcinogenicity | Category 1A - H350 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
H350i - May cause cancer by inhalation

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P281 - Use personal protective equipment as required

**Response**
P314 - Get medical attention/advice if you feel unwell
P308 + P313 - IF exposed or concerned: Get medical advice/attention

**Storage**
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Crystalline silica, quartz | 14808-60-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 1 - 5% | Carc. 1A (H350)<br>STOT RE 1 (H372) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

None anticipated

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store in a well ventilated area. Keep container closed when not in use. Store locked up. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | TWA: 0.1 mg/m$^3$ | TWA: 0.025 mg/m$^3$ |

**Appropriate engineering controls**

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product. |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | Pink to tan to gray |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 4.23 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 233.4 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | > 15000 mg/kg (human) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** None known.

**Ingestion** None known.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

**Exposure Levels**

No data available

**Interactive effects**

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|

| | | |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the eye No information available |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata) | LL0(96 h)=10000 mg/L (Danio rerio) | No information available | LL50(24 h)>10000 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

The methods for determining biodegradability are not applicable to inorganic substances.

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**
Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |

| | |
|---|---|
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 08-Jan-2019

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BENTONITE

**Revision Date:** 28-Jan-2020 **Revision Number:** 51

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BENTONITE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000126

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Weight Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Carcinogenicity | Category 2 - H351 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:**
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P281 - Use personal protective equipment as required

**Response**
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

**Storage**
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Crystalline silica, quartz | 14808-60-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 1 - 5% | Carc. 1A (H350)<br>STOT RE 1 (H372) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Rinse mouth with water many times. Get medical attention, if symptoms occur

**Symptoms caused by exposure**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**
None anticipated

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**
None known.

**6.3. Methods and material for containment and cleaning up**
Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**
This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**
Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | TWA: 0.1 mg/m$^3$ | TWA: 0.025 mg/m$^3$ |

**Appropriate engineering controls**

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace. |
| **Skin Protection** | Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | Various |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9.9 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.65 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

### 10.5. Incompatible materials

Hydrofluoric acid.

### 10.6. Hazardous decomposition products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

### Information on routes of exposure

**Principle Route of Exposure** Eye or skin contact, inhalation.

### Symptoms related to exposure

**Most Important Symptoms/Effects**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

### Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | > 15000 mg/kg (human) | No data available | No data available |

### Immediate, delayed and chronic health effects from exposure

**Inhalation** Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** None known.

**Ingestion** May act as obstruction if swallowed.

**Chronic Effects/Carcinogenicity** This product contains a suspected carcinogen. May cause damage to organs through prolonged or repeated exposure. Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

### Exposure Levels

No data available

### Interactive effects

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

### Data limitations

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the eye No information available |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata) | LL0(96 h)=10000 mg/L (Danio rerio) | No information available | LL50(24 h)>10000 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable

of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 28-Jan-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H351 - Suspected of causing cancer if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CALCIUM CARBONATE

**Revision Date:** 29-Oct-2018 **Revision Number:** 38

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CALCIUM CARBONATE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000141

**Recommended use of the chemical and restrictions on use**

**Recommended Use** pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Carcinogenicity | Category 1A - H350 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H350i - May cause cancer by inhalation
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P281 - Use personal protective equipment as required

**Response**
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

**Storage**
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Crystalline silica, quartz | 14808-60-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 1 - 5% | Carc. 1A (H350)<br>STOT RE 1 (H372) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | TWA: 0.1 mg/m$^3$ | TWA: 0.025 mg/m$^3$ |

**Appropriate engineering controls**

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product. |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | Light tan |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.7 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong acids. Prolonged contact with aluminum. Ammonium salts.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite

(1470 C).

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | > 15000 mg/kg (human) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** None known.

**Ingestion** None known.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Exposure Levels**

No data available

**Interactive effects**

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be

exposed to quartz dust.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the eye No information available |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata) | LL0(96 h)=10000 mg/L (Danio rerio) | No information available | LL50(24 h)>10000 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 29-Oct-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
OSHA
ECHA C&L

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained

from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# GASCON 469

**Revision Date:** 30-Apr-2020 **Revision Number:** 33

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** GASCON 469

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000753

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool well ventilated area. Keep from excessive heat. Keep from freezing. Keep container closed when not in use. Store in non-rusting containers. Product has a shelf life of 12 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)
**Hand Protection** None known.
**Skin Protection** Normal work coveralls.
**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid
**Color** Transparent
**Odor:** Odorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 10 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100 °C / 212 °F |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.1 |
| **Water Solubility** | Soluble in water (10g/100ml) |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** 80

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers. Strong acids.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| substances in concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** May cause mild skin irritation.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

**Australian AICS Inventory** All components are listed on the AICS or are subject to a relevant exemption, permit, or

| | |
|---|---|
| | assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# GASSTOP ADDITIVE

**Revision Date:** 23-Jul-2018 **Revision Number:** 32

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** GASSTOP ADDITIVE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000755

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Not classified | |
| Combustible dust | Combustible dust |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Rinse mouth with water many times. Get medical attention, if symptoms occur

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool, dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
**Skin Protection** Wear protective clothing appropriate for the work environment.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White to off white |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | -8 °C |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.37 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | > 600 |
| **VOC Content (%)** | < 5% |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**
Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List** | All components listed on inventory or are exempt. |

**(DSL)**

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 23-Jul-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# HALAD® 344 CEMENT ADDITIVE

**Revision Date:** 01-Feb-2021 **Revision Number:** 45

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** HALAD® 344 CEMENT ADDITIVE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000816

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | NF | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store in a cool, dry location. Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)

**Hand Protection** None known.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Powder
**Color** White to off white
**Odor:** Odorless
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | No data available | |
| **Freezing Point / Range** | -8 °C | |
| **Melting Point / Range** | No data available | |
| **Pour Point / Range** | No data available | |
| **Boiling Point / Range** | No data available | |
| **Flash Point** | No data available | |
| **Evaporation rate** | No data available | |
| **Vapor Pressure** | No data available | |
| **Vapor Density** | No data available | |
| **Specific Gravity** | 1.22 | |
| **Water Solubility** | Soluble in water | |
| **Solubility in other solvents** | No data available | |
| **Partition coefficient: n-octanol/water** | No data available | |
| **Autoignition Temperature** | No data available | |
| **Decomposition Temperature** | No data available | |
| **Viscosity** | No data available | |
| **Explosive Properties** | No information available | |
| **Oxidizing Properties** | No information available | |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | > 600 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**
Oxides of nitrogen. Carbon monoxide and carbon dioxide. Oxides of sulfur.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** Not irritating to skin in rabbits.

**Ingestion** No adverse health effects are expected from swallowing.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

None known.

**Data limitations**

No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

Not readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in | NA | No information available |

| | | |
|---|---|---|
| concentrations above cut-off values according to the competent authority | | |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

### Safe handling and disposal methods

Bury in a licensed landfill according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

### Disposal of any contaminated packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

### Environmental regulations

Not applicable

## 14. Transport Information

### Transportation Information

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

### Special precautions during transport

None

### HazChem Code

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 01-Feb-2021

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury

w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# HALAD® 413L CEMENT ADDITIVE

**Revision Date:** 07-May-2018 **Revision Number:** 26

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** HALAD® 413L CEMENT ADDITIVE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000824

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Wash with soap and water. Get medical attention if irritation persists. |
| **Ingestion** | Under normal conditions, first aid procedures are not required. |

**Symptoms caused by exposure**

No significant hazards expected.

**Medical Attention and Special Treatment**

| | |
|---|---|
| **Notes to Physician** | Treat symptomatically |

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid
**Color** Brown-black
**Odor:** Sweet
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 7.5 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.1 |
| **Water Solubility** | Miscible with water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.
**Eye Contact** None known.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | Product contains one or more components not listed on the inventory. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 07-May-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# HR-25L

**Revision Date:** 01-Feb-2021 **Revision Number:** 41

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** HR-25L

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000893

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement Retarder

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Acute Aquatic Toxicity | Category 3 - H402 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

**Precautionary Statements**

**Prevention**
P273 - Avoid release to the environment
P280 - Wear eye protection/face protection

**Response**
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Storage** None

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Tartaric acid | 87-69-4 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Tartaric acid | 87-69-4 | 30 - 60% | Eye Corr. 1 (H318)<br>Aquatic Acute 3 (H402) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Causes severe eye irritation which may damage tissue.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Neutralize to pH of 6-8. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**
Store away from alkalis. Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 60 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Tartaric acid | 87-69-4 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an

| | |
|---|---|
| | industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Impervious rubber gloves. |
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Light yellow-green |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 1.7 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 103 °C / 219 °F |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.2 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers. Strong alkalis.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue.

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Tartaric acid | 87-69-4 | 2000 - 5000 mg/kg (Rat) | > 2000 mg/kg (Rat) | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Not irritating to skin in rabbits.

**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

Skin disorders.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Tartaric acid | 87-69-4 | Non-irritating to the skin (Rabbit) (in vitro) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Tartaric acid | 87-69-4 | Causes severe eye irritation (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Tartaric acid | 87-69-4 | Did not cause sensitization on laboratory animals (mouse) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Tartaric acid | 87-69-4 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Tartaric acid | 87-69-4 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Tartaric acid | 87-69-4 | Did not show carcinogenic effects in animal experiments (Rat) (similar substances) |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Tartaric acid | 87-69-4 | Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Tartaric acid | 87-69-4 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Tartaric acid | 87-69-4 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Tartaric acid | 87-69-4 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Tartaric acid | 87-69-4 | E(B)C50 2575.2 mg/L (Skeletonema costatum)<br>E(R)C50 1198 mg/L (Skeletonema costatum)<br>EC50 791.25 mg/L (Skeletonema costatum)<br>EC50 (72h) 51.4043 mg/L (Pseudokirchnerella subcapitata) | LC50 250 mg/L (Scophthalmus maximus)<br>LC50 (96h) > 100 mg/L (Danio rerio) | EC50 (3h) > 1000 mg/L (Activated sludge) | TLM96 330-1000 ppm (Crangon crangon)<br>EC50 46.04 - 165.37 mg/L (Ceriodaphnia dubia)<br>LC50 3753.85 (Acartia tonsa)<br>EC50 (48h) 93.313 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

Readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Tartaric acid | 87-69-4 | Readily biodegradable (85% @ 28d) |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Tartaric acid | 87-69-4 | -1 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Tartaric acid | 87-69-4 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 01-Feb-2021

**Revision Note**
SDS sections updated:
15

**Full text of H-Statements referred to under sections 2 and 3**
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# HR-6L

**Revision Date:** 10-Mar-2020 **Revision Number:** 23

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** HR-6L

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000901

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement Retarder

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally necessary.

**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**
**Physical State:** Liquid
**Color** Dark brown
**Odor:** Molasses
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9.5 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 98 °C / > 210 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.21 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Liquid Density** | 10.08 lbs/gal |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Oxides of sulfur. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

This product is not regarded as hazardous waste. Dispose in accordance with local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 10-Mar-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# KWIK SEAL ADDITIVE

**Revision Date:** 30-Apr-2020 **Revision Number:** 23

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** KWIK SEAL ADDITIVE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM000976

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Lost Circulation Material

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Rinse mouth with water many times. Get medical attention, if symptoms occur

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**

None known.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid creating or inhaling dust. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store in a cool, dry location.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

**Skin Protection** Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** Brown
**Odor:** Woody
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 0.3 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |

| | |
|---|---|
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained

from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SA-541

**Revision Date:** 16-Mar-2020 **Revision Number:** 26

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SA-541

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001226

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Flush skin with large amounts of water. If irritation persists, get medical attention.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Slippery when wet. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Slippery when wet. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
**Skin Protection** Wear protective clothing appropriate for the work environment.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** White to light straw
**Odor:** Mild
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 10.1 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 93 °C / > 200 °F |
| **Lower flammability limit** | 0.29 oz./ft3 |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.4 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 510 °C / 950 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 36 lbs/gallon |

## 10. Stability and Reactivity

**10.1. Reactivity**
May form combustible dust concentrations in air.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| substances in concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mild eye irritation.
**Skin Contact** May cause mild skin irritation.
**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

**Australian AICS Inventory** All components are listed on the AICS or are subject to a relevant exemption, permit, or

| | |
|---|---|
| | assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 16-Mar-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
mg/m$^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SCR-100L

**Revision Date:** 28-Jan-2020 **Revision Number:** 43

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SCR-100L

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001254

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Retarder

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a dry location. Keep container closed when not in use.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Blue |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 3 - 4 (28%) |
| **Freezing Point / Range** | -4 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 93 °C / > 200 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.16 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 520 °C |
| **Decomposition Temperature** | No data available |
| **Viscosity** | 15-30 cP @ 25°C |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | ~60% |
| **Liquid Density** | 9.66 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Oxides of nitrogen. Oxides of sulfur. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 28-Jan-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SILICALITE LIQUID

**Revision Date:** 30-Apr-2020 **Revision Number:** 26

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SILICALITE LIQUID

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001274

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Light Weight Cement Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Flush skin with large amounts of water. If irritation persists, get medical attention.

**Ingestion** Rinse mouth with water many times. Get medical attention, if symptoms occur

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
None known. Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Keep container closed when not in use. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally necessary.

**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Dark gray |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6- 8 |
| **Freezing Point / Range** | 0 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100 °C / 212 °F |
| **Flash Point** | 100 °C / > 212 °F |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 22.9 |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.37 |
| **Water Solubility** | Miscible with water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Liquid Density** | 11.64 lbs/gal |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**
Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye and skin contact.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SODIUM CHLORIDE

**Revision Date:** 30-Apr-2020 **Revision Number:** 38

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SODIUM CHLORIDE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001682

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Sodium chloride | 7647-14-5 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Sodium chloride | 7647-14-5 | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
**Skin** Wash with soap and water. Get medical attention if irritation persists.
**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
Causes mild eye irritation. May be harmful if swallowed.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
None anticipated

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust.

**6.2. Environmental precautions**
None known.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool, dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Sodium chloride | 7647-14-5 | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**
**Physical State:** Solid
**Color** White
**Odor:** Odorless
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | No data available | |

| | |
|---|---|
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | 801 °C / 1473.8 °F |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.16 |
| **Water Solubility** | Very soluble |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive. Stable under normal conditions

**10.2. Chemical stability**

Stable under normal conditions

**10.3. Possibility of hazardous reactions**

None known

**10.4. Conditions to avoid**

None known.

**10.5. Incompatible materials**

None known.

**10.6. Hazardous decomposition products**

None known.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes mild eye irritation. May be harmful if swallowed.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Sodium chloride | 7647-14-5 | 3000 mg/kg-bw (rat) | >10,000 mg/kg bw (rabbit) | No data available |

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | May cause mild respiratory irritation. |
| **Eye Contact** | Causes mild eye irritation. |
| **Skin Contact** | May cause mild skin irritation. |
| **Ingestion** | May be harmful if swallowed. |

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Sodium chloride | 7647-14-5 | Not a dermal irritant |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Sodium chloride | 7647-14-5 | Causes mild eye irritation. |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Sodium chloride | 7647-14-5 | Not confirmed to cause skin or respiratory sensitization. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Sodium chloride | 7647-14-5 | Not confirmed to cause skin or respiratory sensitization. |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Sodium chloride | 7647-14-5 | No information available |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Sodium chloride | 7647-14-5 | Based on available data, the classification criteria are not met. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Sodium chloride | 7647-14-5 | Based on available data, the classification criteria are not met. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Sodium chloride | 7647-14-5 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Sodium chloride | 7647-14-5 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Sodium chloride | 7647-14-5 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Sodium chloride | 7647-14-5 | No information available | LC50 (96h) 9675 mg/L | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Sodium chloride | 7647-14-5 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Sodium chloride | 7647-14-5 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Sodium chloride | 7647-14-5 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

If practical, recover and reclaim, recycle, or reuse by the guidelines of an approved local reuse program. Should contaminated product become a waste, dispose of in a licensed industrial landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |

| | |
|---|---|
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures
EC – European Commission
EC10 – Effective Concentration 10%
EC50 – Effective Concentration 50%
EEC – European Economic Community
ErC50 – Effective Concentration growth rate 50%
IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL0 – Lethal Loading 0%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
PC – Chemical Product category
PEL – Permissible Exposure Limit
ppm – parts per million
PROC – Process category
REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit
SU – Sector of Use category
TWA – Time-Weighted Average
UN – United Nations
VOC – Volatile Organic Carbon
vPvB – very Persistent and very Bioaccumulative
VLA-ED - time-weighted average values for a whole work shift [Spain valores límite ambientales para la exposición diaria]
NDS - najwyisze dopuszczalne stkienie na stanowisku pracy
SZW - Netherlands Ministry of Social Affairs and Employment
ADR - The European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS 1715 - New Zeland Standard on Selection, use and maintenance of respiratory protective equipment
C - Celsius
EN 149 - European standard on filtering halfmasks to protect against particles
EN 374 - European standard on Protective gloves against chemicals and micro-organisms
FFP - Filtering Facepieces
h - hour
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
NDS - OEL-TWA [Poland najwyisze dopuszczalne stkienie na stanowisku pracy]
R/H-phrases - Risk/Hazard-phrases
RID - The European Agreement concerning the International Carriage of Dangerous Goods by Rail
UK - United Kingdom
w/w - weight/weight
VLA-EC - short-time excursion limits [Spain valores límite ambientales para la exposición de corta duración]
MAK - Maximum Workplace Concentration
d - day
vPvB – very Persistent and very Bioaccumulative

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SODA ASH

**Revision Date:** 24-Apr-2017 **Revision Number:** 42

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SODA ASH

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001822

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Buffer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 2 - H319 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:** H319 - Causes serious eye irritation

**Precautionary Statements**

**Prevention**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/face protection

**Response**
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Storage** None

**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Sodium carbonate | 497-19-8 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Sodium carbonate | 497-19-8 | 60 - 100% | Eye Irrit. 2 (H319) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Causes eye irritation

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from acids. Store in a cool, dry location. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Sodium carbonate | 497-19-8 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area. Localized ventilation should be used to control dust levels.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be

performed by an Industrial Hygienist or other qualified professional.

| | |
|---|---|
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Dust proof goggles. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Powder | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 11.5 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | 851 °C |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.5 |
| **Water Solubility** | Partly soluble |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 105.99 g/mole |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes eye irritation

## Numerical measures of toxicity

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Sodium carbonate | 497-19-8 | 4090 mg/kg (Rat)<br>2800 mg/kg (Rat) | 2210 mg/kg (Mouse)<br>> 2000 mg/kg (Rabbit) | 2.3 mg/L (Rat) 2h |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** Causes eye irritation.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Sodium carbonate | 497-19-8 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Sodium carbonate | 497-19-8 | Irritating to eyes |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Sodium carbonate | 497-19-8 | Not classified |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Sodium carbonate | 497-19-8 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Sodium carbonate | 497-19-8 | In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Sodium carbonate | 497-19-8 | No information available |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Sodium carbonate | 497-19-8 | Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Sodium carbonate | 497-19-8 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Sodium carbonate | 497-19-8 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Sodium carbonate | 497-19-8 | Not applicable |

# 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Sodium carbonate | 497-19-8 | EC50 242 mg/L (Nitzschia) | TLM24 385 mg/L (Lepomis macrochirus) LC50 310-1220 mg/L (Pimephales promelas) LC50 (96h) 300 mg/L (Lepomis macrochirus) | No information available | EC50 265 mg/L (Daphnia magna) EC50 (48h) 200 – 227 mg/L (Ceriodaphnia sp.) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Sodium carbonate | 497-19-8 | The methods for determining biodegradability are not applicable to inorganic substances. |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Log Pow |
|---|---|---|
| Sodium carbonate | 497-19-8 | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Sodium carbonate | 497-19-8 | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable

| | |
|---|---|
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 24-Apr-2017

**Revision Note**
SDS sections updated: 2

**Full text of H-Statements referred to under sections 2 and 3**
H319 - Causes serious eye irritation

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter

NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SODIUM BICARBONATE

**Revision Date:** 30-Apr-2020 **Revision Number:** 38

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SODIUM BICARBONATE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001824

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Buffer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from acids. Store in a dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

| | |
|---|---|
| **Engineering Controls** | A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation. |

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Not normally needed. But if significant exposures are possible then the following respirator is recommended:<br>Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.16 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong acids.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|

| | | |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any

material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CEMENT - CLASS G

**Revision Date:** 02-Aug-2018 **Revision Number:** 38

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CEMENT - CLASS G

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001839

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Skin Corrosion/Irritation | Category 2 - H315 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Skin Sensitization | Category 1 - H317 |
| Carcinogenicity | Category 1A - H350 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Specific Target Organ Toxicity - (Repeated Exposure) | Category 2 - H373 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer by inhalation
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/eye protection/face protection
P281 - Use personal protective equipment as required

**Response**
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P314 - Get medical attention/advice if you feel unwell

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Portland cement | 65997-15-1 |
| Crystalline silica, quartz | 14808-60-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Portland cement | 65997-15-1 | 60 - 100% | Skin Irrit. 2 (H315) |

| | | | |
|---|---|---|---|
| | | | Eye Corr. 1 (H318)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335) |
| Crystalline silica, quartz | 14808-60-7 | 1 - 5% | Carc. 1A (H350)<br>STOT RE 1 (H372) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes skin irritation. May cause allergic skin reaction. May cause respiratory irritation. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

None - does not burn.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Not applicable

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**

Store in a cool well ventilated area. Keep container closed when not in use. Store locked up. Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Product has a shelf life of 24 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

### Control parameters - exposure standards, biological monitoring

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Portland cement | 65997-15-1 | TWA: 10 mg/m³ | TWA: 1 mg/m³ |
| Crystalline silica, quartz | 14808-60-7 | TWA: 0.1 mg/m³ | TWA: 0.025 mg/m³ |

### Appropriate engineering controls

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

### Personal protective equipment (PPE)

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

**Physical State:** Solid
**Color** Gray
**Odor:** Odorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 12.4 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 3.14 |

| | |
|---|---|
| **Water Solubility** | No data available |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

Keep away from any contact with water.

**10.5. Incompatible materials**

Hydrofluoric acid.

**10.6. Hazardous decomposition products**

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes skin irritation. May cause allergic skin reaction. May cause respiratory irritation. Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Portland cement | 65997-15-1 | > 2000 mg/kg (Rat) | > 2000 mg/kg | > 1 mg/L (Rat) 4h |
| Crystalline silica, quartz | 14808-60-7 | > 15000 mg/kg (human) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Causes moderate respiratory irritation. Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Causes skin irritation. May cause alkali burns with confined contact. May cause an allergic skin reaction. Can dry skin.

**Ingestion** Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Exposure Levels**
No data available

**Interactive effects**
Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Portland cement | 65997-15-1 | Irritating to skin. (Rabbit) |
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Portland cement | 65997-15-1 | Corrosive to eyes |
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the eye No information available |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Portland cement | 65997-15-1 | May cause sensitization by skin contact |
| Crystalline silica, quartz | 14808-60-7 | No information available. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Portland cement | 65997-15-1 | No information available |
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Portland cement | 65997-15-1 | No data of sufficient quality are available. |
| Crystalline silica, quartz | 14808-60-7 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Portland cement | 65997-15-1 | No data of sufficient quality are available. |
| Crystalline silica, quartz | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|

| | | |
|---|---|---|
| Portland cement | 65997-15-1 | No data of sufficient quality are available. |
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Portland cement | 65997-15-1 | May cause respiratory irritation. |
| Crystalline silica, quartz | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Portland cement | 65997-15-1 | No data of sufficient quality are available. |
| Crystalline silica, quartz | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Portland cement | 65997-15-1 | Not applicable |
| Crystalline silica, quartz | 14808-60-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Portland cement | 65997-15-1 | No information available | No information available | No information available | No information available |
| Crystalline silica, quartz | 14808-60-7 | EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata) | LL0(96 h)=10000 mg/L (Danio rerio) | No information available | LL50(24 h)>10000 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Portland cement | 65997-15-1 | The methods for determining biodegradability are not applicable to inorganic substances. |
| Crystalline silica, quartz | 14808-60-7 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Portland cement | 65997-15-1 | No information available |
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Portland cement | 65997-15-1 | No information available |
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 02-Aug-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# NF-6

**Revision Date:** 11-Feb-2021 **Revision Number:** 41

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** NF-6

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM001971

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Defoamer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Carbon dioxide, dry chemical, foam.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Use water spray to cool fire exposed surfaces. Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator with a dust/mist filter. (A2P2/P3)
**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polyvinylchloride gloves. (>= 8 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in

| | |
|---|---|
| | practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Yellow |
| **Odor:** | Mild | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 182 °C / 360 °F |
| **Flash Point** | > 170 °C / > 340 °F |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 0.93 |
| **Water Solubility** | Dispersible |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 385 °C / 725 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Liquid Density** | 7.70 lbs/gal |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Hydrocarbons. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** None known.

**Skin Contact** None known.

**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

None known.

**Data limitations**

No data available

## 12. Ecological Information

**Ecotoxicity**

**Product Ecotoxicity Data**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Dispose in accordance with local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 11-Feb-2021

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID
Cosmetic Ingredient Review

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# D-AIR 3000L

**Revision Date:** 07-Nov-2019 **Revision Number:** 31

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** D-AIR 3000L

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003191

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Defoamer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Alkenes, C15-C18 | 93762-80-2 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | 60 - 100% | Asp. Tox. 1 (H304)<br>Skin haz. Repeated exp. Yes (AUH066) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 24 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally necessary.

**Hand Protection** None known.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Opaque |
| **Odor:** | Hydrocarbon | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 5.5-7.9 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 121 °C / > 249.8 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 0.92 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | > 5000 mg/kg (Rat) (similar substance) | > 2000 mg/kg (Rat) (similar substance) | > 2.1 mg/L (Rat) |

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | None known. |
| **Eye Contact** | May cause mild eye irritation. |
| **Skin Contact** | May cause mild skin irritation. |

**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Not irritating to skin in rabbits. (similar substances) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Non-irritating to rabbit's eye (similar substances) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Did not cause sensitization on laboratory animals (similar substances) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | In vitro tests did not show mutagenic effects. (similar substances) |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | No information available |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | No information available |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | EC50 (72h) > 1000 mg/L (Selenastrum capicomutum) (similar substance) | LL50 (96h) > 1000 mg/L (Oncorhynchus mykiss) (similar substance)<br>LL50 (96h) > 10000 mg/L (Scopthalmus maximus) (similar substance) | No information available | EC50 (48h) > 1000 mg/L (Daphnia magna) (similar substance) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | Readily biodegradable (77 - 81% @ 28d) |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | > 7 |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Alkenes, C15-C18 | 93762-80-2 | KOC >5 |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 07-Nov-2019

**Revision Note**

SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**

H304 - May be fatal if swallowed and enters airways
EUH066 - Repeated exposure may cause skin dryness or cracking

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour

mg/m$^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID
OSHA
ECHA C&L

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BaraCor® 100

**Revision Date:** 18-Jun-2020 **Revision Number:** 61

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BaraCor® 100

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003391

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Corrosion Inhibitor

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Skin Corrosion/Irritation | Category 2 - H315 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Skin Sensitization | Category 1 - H317 |
| Carcinogenicity | Category 2 - H351 |
| Reproductive Toxicity | Category 1B - H360 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 1 - H370 |
| Flammable liquids. | Category 3 - H226 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H226 - Flammable liquid and vapor
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H351 - Suspected of causing cancer
H360 - May damage fertility or the unborn child
H370 - Causes damage to organs

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment
P242 - Use only non-sparking tools
P243 - Take action to prevent static discharges.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/eye protection/face protection
P281 - Use personal protective equipment as required

**Response**
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use water spray for extinction

**Storage**
P403 + P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 |
| Methanol | 67-56-1 |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 |

**Other hazards which do not result in classification**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | 10 - 30% | Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>Skin Sens. 1 (H317) |
| Methanol | 67-56-1 | 10 - 30% | Acute Tox. 3 (H301)<br>Acute Tox. 3 (H311)<br>Acute Tox. 3 (H331)<br>STOT SE 1 (H370)<br>Flam. Liq. 2 (H225) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | 1 - 5% | Acute Tox. 4 (H302)<br>Eye Irrit. 2A (H319)<br>Carc. 2 (H351) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

**Ingestion** Following ingestion, onset of symptoms may be delayed by 12 to 24 hours. Admission to hospital should be the first priority even if symptoms are absent. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

**Symptoms caused by exposure**

Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes skin irritation. Causes severe eye irritation which may damage tissue. May cause allergic skin reaction. Potential carcinogen. May cause damage to internal organs.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
Do NOT spray pool fires directly with water. A solid stream of water directed into hot burning liquid can cause splattering.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation. Use appropriate protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Remove sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas. Consult local authorities.

**6.3. Methods and material for containment and cleaning up**
Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Remove ignition sources and work with non-sparking tools.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Do not breathe dust/fume/gas/mist/vapors/spray. Ensure adequate ventilation. Use appropriate protective equipment. Remove sources of ignition. Ground and bond containers when transferring from one container to another. Avoid contact with eyes, skin, or clothing.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool well ventilated area. Keep from heat, sparks, and open flames.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Not applicable | Not applicable |
| Methanol | 67-56-1 | TWA: 200 ppm<br>TWA: 262 mg/m$^3$<br>STEL: 250 ppm<br>STEL: 328 mg/m$^3$ | TWA: 200 ppm<br>STEL: 250 ppm |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Ensure adequate ventilation, especially in confined areas

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Positive pressure self-contained breathing apparatus. |
| **Hand Protection** | Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Neoprene gloves. Nitrile gloves. Butyl rubber gloves. This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. Impervious gloves |
| **Skin Protection** | Rubber apron. Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Brown |
| **Odor:** | Alcohol | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9-11 |
| **Freezing Point / Range** | -23 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100 °C / 212 °F |
| **Flash Point** | 33 °C / 92 °F (PMCC) |
| **Upper flammability limit** | 36% |
| **Lower flammability limit** | 6% |
| **Evaporation rate** | 1.6 |
| **Vapor Pressure** | No data available |
| **Vapor Density** | > 1 |
| **Specific Gravity** | 1.01 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | -0.84 |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
Keep away from heat, sparks and flame.
**10.5. Incompatible materials**
Strong oxidizers. Strong acids. Strong alkalis.
**10.6. Hazardous decomposition products**
Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes skin irritation. Causes severe eye irritation which may damage tissue. May cause allergic skin reaction. Potential carcinogen. May cause damage to internal organs.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | 3816 mg/kg-bw (rat) | > 2000 mg/kg (Rat) | No toxicity at saturation (rat, 8 h, vapour) |
| Methanol | 67-56-1 | 300 mg/kg-bw (human)<br>< 790 to 13,000 mg/kg (rat) | 1000 mg/kg-bw (human)<br>17,100 mg/kg (rabbit) | 10 mg/L (human, vapor, 4h) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | 1740 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | > 5 mg/L (Rat, Aerosol, 4h) |

**Immediate, delayed and chronic health effects from exposure**
**Inhalation** May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness. Harmful if inhaled.
**Eye Contact** Causes serious eye damage.
**Skin Contact** Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
**Ingestion** Ingestion of this product may cause blindness due to the presence of methanol. Harmful if swallowed.

**Chronic Effects/Carcinogenicity** Contains known or suspected carcinogens. Contains nitrilotriacetic acid or its salts, which is NTP Classification 2 (Reasonably Anticipated to be a Human Carcinogen) and IARC Classification 2B (a Possible Human Carcinogen)

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Eye ailments.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Causes moderate skin irritation. (Rabbit) Skin, rabbit: |
| Methanol | 67-56-1 | Non-irritating to the skin (Rabbit) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Non-irritating to the skin (Rabbit) Not irritating to skin in rabbits. Skin, rabbit: |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Causes eye burns Causes severe eye irritation. Will damage tissue. |
| Methanol | 67-56-1 | Non-irritating to the eye (Rabbit) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Irritating to eyes (Rabbit) Eye, rabbit: Causes moderate eye irritation |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | May cause sensitization by skin contact (mouse) |
| Methanol | 67-56-1 | Did not cause sensitization on laboratory animals (guinea pig) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Did not cause sensitization on laboratory animals (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | No information available |
| Methanol | 67-56-1 | No information available |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |
| Methanol | 67-56-1 | The weight of evidence from available in vitro and in vivo studies indicates that this substance is not expected to be mutagenic. |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Not regarded as mutagenic. In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | No information available |
| Methanol | 67-56-1 | No data of sufficient quality are available. |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Contains nitrilotriacetic acid or its salts, which is listed as a suspect carcinogen of the urinary tract and kidneys by NTP, based on feeding studies with laboratory animals. According to the ACGIH guidelines, NTA would "not be considered an occupational carcinogen of any significance." IARC cancer review classification: 2B (Possibly Carcinogenic to Humans)<br>Available data indicate that this substance is a suspected carcinogen. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |
| Methanol | 67-56-1 | Based on available data, the classification criteria are not met. Experiments have shown reproductive toxicity effects on laboratory animals |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Methanol | 67-56-1 | May cause disorder and damage to the Central Nervous System (CNS) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Methanol | 67-56-1 | No data of sufficient quality are available. |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Not applicable |
| Methanol | 67-56-1 | Not applicable |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | EC50 (72 h) =100 mg/L (Skeletonema costatum)<br>EC50 (72 h) >120 mg/L (Desmodesmus subspicatus)<br>NOEC (72 h) >120 mg/L (Desmodesmus subspicatus) | LC50 (96 h) >100 mg/L (Scophthalmus maximus)<br>LC50 (96 h) =681.1 mg/L (Leuciscus idus) | EC50 (3h) > 1000 mg/L (activated sludge) | LC50 (48 h) =287.2 mg/L (Acartia tonsa)<br>EC50 (48 h) >120 mg/L (Daphnia Magna) |
| Methanol | 67-56-1 | EC50 (96 h) =22000 mg/L (Pseudokirchnerella subcapitata)<br>NOEC (8 d) =8000 mg/L (Scenedesmus quadricauda) | LC50(96 h)=15400 mg/L (Lepomis macrochirus)<br>EC50 (200h)=14536 mg/L (Oryzias latipes) | No information available | NOEC(21 d)=208 mg/L (Daphnia magna)<br>EC50 (48h)=22200 mg/L (Daphnia obtuse) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | EC50 (72 h) >91.5 mg/L (Desmodesmus subspicatus)<br>EC50 (72h) 73.4 mg/L (Skeletonema costatum) | TL50 (96 h) =103 mg/L (Pimephales promelas)<br>LC50 (96h) > 73.4 mg/L (Scophthalmus maximus)<br>NOEC (229 d) >54 mg/L (Pimephales promelas) | NOEC (90d) >200 mg/L (activated sludge) | TL50 (96 h) range115 mg/L (Gammarus pseudolimnaeus)<br>EC50 (48h) 171.1 mg/L (Acartia tonsa)<br>NOEC (147 d) =9.3 mg/L (Gammarus pseudolimnaeus) |

**12.2. Persistence and degradability**

Not readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | (10.2% @ 28d) |
| Methanol | 67-56-1 | Readily biodegradable (95% @ 20d) |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | Readily biodegradable (100% @ 14d) Marine water Persistent (6.6% @ 28d) |

### 12.3. Bioaccumulative potential

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | Log Pow <1 |
| Methanol | 67-56-1 | Not Bioaccumulative; BCF=1 |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | -2.62 (calculated) |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues | 68909-77-3 | No information available |
| Methanol | 67-56-1 | No information available |
| Nitrilotriacetic acid, trisodium salt monohydrate | 5064-31-3 | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** UN1993
**UN proper shipping name:** Flammable Liquid, N.O.S. (Contains Methanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** UN1993
**UN proper shipping name:** Flammable Liquid, N.O.S. (Contains Methanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable
**EMS:** EmS F-E, S-E

**IATA/ICAO**

**UN Number** UN1993
**UN proper shipping name:** Flammable Liquid, N.O.S. (Contains Methanol)
**Transport Hazard Class(es):** 3
**Packing Group:** III
**Environmental Hazards:** Not applicable

**Special precautions during transport**

None

**HazChem Code**

•3Y

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

S6

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 18-Jun-2020

**Revision Note**

SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**

H225 - Highly flammable liquid and vapor
H226 - Flammable liquid and vapor
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H332 - Harmful if inhaled
H351 - Suspected of causing cancer
H370 - Causes damage to organs

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%

LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CON DET®

**Revision Date:** 09-Sep-2020 **Revision Number:** 28

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**
**Product Name** CON DET®

**Other means of Identification**
**Synonyms** None
**Hazardous Material Number:** HM003454

**Recommended use of the chemical and restrictions on use**
**Recommended Use** Anionic Surfactant
**Uses advised against** No information available

**Supplier's name, address and phone number**
**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300
**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**
+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 2 - H319 |
| Acute Aquatic Toxicity | Category 3 - H402 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:**
H319 - Causes serious eye irritation
H402 - Harmful to aquatic life

**Precautionary Statements**

**Prevention**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear eye protection/face protection

**Response**
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Storage** None

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 |
| Isopropanol | 67-63-0 |
| Potassium pyrophosphate | 7320-34-5 |
| Potassium hydroxide | 1310-58-3 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| **Substances** | **CAS Number** | **PERCENT (w/w)** | **GHS Classification - Australia** |
|---|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | 5 - 10% | Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>Aquatic Acute 2 (H401)<br>Aquatic Chronic 2 (H411) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | 1 - 5% | Eye Irrit. 2 (H319) |
| Isopropanol | 67-63-0 | 1 - 5% | Eye Irrit. 2 (H319)<br>STOT SE 3 (H336)<br>Flam. Liq. 2 (H225) |
| Potassium pyrophosphate | 7320-34-5 | 1 - 5% | Eye Irrit. 2A (H319) |
| Potassium hydroxide | 1310-58-3 | 0.1 - 1% | Acute Tox. 4 (H302)<br>Skin Corr. 1 (H314)<br>Eye Corr. 1 (H318)<br>STOT SE 3 (H335)<br>Met. Corr. 1 (H290) |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Flush skin with large amounts of water. If irritation persists, get medical attention. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**

Causes mild skin irritation. Causes eye irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Keep container closed when not in use. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Not applicable | Not applicable |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | TWA: 400 ppm<br>TWA: 983 mg/m$^3$<br>STEL: 500 ppm<br>STEL: 1230 mg/m$^3$ | TWA: 200 ppm<br>STEL: 400 ppm |
| Potassium pyrophosphate | 7320-34-5 | Not applicable | Not applicable |
| Potassium hydroxide | 1310-58-3 | Not applicable | Ceiling: 2 mg/m$^3$ |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid
**Color** Transparent Red
**Odor:** Alcohol
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9.5 @ 1% |
| **Freezing Point / Range** | -2.2 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | 99 °C / 210 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.025 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes mild skin irritation. Causes eye irritation.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | >5000 mg/kg-bw (rat) | >2000 mg/kg-bw (rabbit) | No data available |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | 7200 mg/kg (Rat)<br>> 7000 mg/kg (Rat) | >2000 mg/kg (Rabbit) | >6.41 mg/L (Rabbit) 3.87h (similar substance) |
| Isopropanol | 67-63-0 | 4700 mg/kg-bw (rat) | 12870 mg/kg-bw (rabbit) | 72.6 mg/L (Rat, 4h, vapor) |
| Potassium pyrophosphate | 7320-34-5 | 2440 mg/kg (Rat) (similar substance) | 4640 mg/kg (Rabbit)<br>> 2000 mg/kg (Rat) | > 1.1 mg/L (Rat) 4h (saturated concentration) |
| Potassium hydroxide | 1310-58-3 | 333 mg/kg (Rat) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**
**Inhalation** May cause mild respiratory irritation.
**Eye Contact** Causes eye irritation.
**Skin Contact** Causes mild skin irritation.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Irritating to skin. (Rabbit) |
| Benzenesulfonic acid, | 1300-72-7 | Not irritating to skin in rabbits. |

| | | |
|---|---|---|
| dimethyl-, sodium salt | | |
| Isopropanol | 67-63-0 | Non-irritating to the skin (Rabbit) |
| Potassium pyrophosphate | 7320-34-5 | Not irritating to skin in rabbits. |
| Potassium hydroxide | 1310-58-3 | Corrosive to skin (Rabbit) |

| **Substances** | **CAS Number** | **Serious eye damage/irritation** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Causes severe eye irritation (Rabbit) (similar substances) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Eye, rabbit: Causes moderate eye irritation |
| Isopropanol | 67-63-0 | Causes moderate eye irritation (Rabbit) |
| Potassium pyrophosphate | 7320-34-5 | Eye, rabbit: Causes moderate eye irritation |
| Potassium hydroxide | 1310-58-3 | Corrosive to eyes (Rabbit) |

| **Substances** | **CAS Number** | **Skin Sensitization** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Did not cause sensitization on laboratory animals (guinea pig) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |
| Isopropanol | 67-63-0 | Did not cause sensitization on laboratory animals (guinea pig) |
| Potassium pyrophosphate | 7320-34-5 | Did not cause sensitization on laboratory animals (mouse) (similar substances) |
| Potassium hydroxide | 1310-58-3 | Did not cause sensitization on laboratory animals (guinea pig) |

| **Substances** | **CAS Number** | **Respiratory Sensitization** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | No information available |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | No information available |
| Isopropanol | 67-63-0 | No information available |
| Potassium pyrophosphate | 7320-34-5 | No information available |
| Potassium hydroxide | 1310-58-3 | No information available |

| **Substances** | **CAS Number** | **Mutagenic Effects** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | In vitro tests did not show mutagenic effects Some in vivo tests have shown mutagenic effects. |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | While some in vitro tests were positive and/or equivocal, in vivo results were negative. (similar substances) |
| Isopropanol | 67-63-0 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |
| Potassium pyrophosphate | 7320-34-5 | In vitro tests did not show mutagenic effects In vivo tests did not show mutagenic effects. (similar substances) |
| Potassium hydroxide | 1310-58-3 | Not regarded as mutagenic. |

| **Substances** | **CAS Number** | **Carcinogenic Effects** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | No data of sufficient quality are available. |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Did not show carcinogenic effects in animal experiments (Rat) |
| Isopropanol | 67-63-0 | Did not show carcinogenic effects in animal experiments |
| Potassium pyrophosphate | 7320-34-5 | No information available |
| Potassium hydroxide | 1310-58-3 | No data of sufficient quality are available. |

| **Substances** | **CAS Number** | **Reproductive toxicity** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Did not show teratogenic effects in animal experiments. |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Did not show teratogenic effects in animal experiments. |
| Isopropanol | 67-63-0 | Animal testing did not show any effects on fertility. |
| Potassium pyrophosphate | 7320-34-5 | Did not show teratogenic effects in animal experiments. (similar substances) |
| Potassium hydroxide | 1310-58-3 | Not applicable due to corrosivity of the substance. |

| **Substances** | **CAS Number** | **STOT - single exposure** |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Isopropanol | 67-63-0 | May cause headache, dizziness, and other central nervous system effects. |

| | | |
|---|---|---|
| Potassium pyrophosphate | 7320-34-5 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Potassium hydroxide | 1310-58-3 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | No data of sufficient quality are available. |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Isopropanol | 67-63-0 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Potassium pyrophosphate | 7320-34-5 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Potassium hydroxide | 1310-58-3 | Not applicable due to corrosivity of the substance. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Not applicable |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | Not applicable |
| Isopropanol | 67-63-0 | Not applicable |
| Potassium pyrophosphate | 7320-34-5 | Not applicable |
| Potassium hydroxide | 1310-58-3 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | EC50(72h) 2.2 mg/L (Scenedesmus subspicatus) | LC50(96h) 3.6 mg/L (Brachydanio rerio) NOEC(28d)=0.32 mg/L (Oncorhynchus mykiss) | No information available | EC50(48h) 2.25 mg/L (Ceriodaphnia dubia) NOEC(21d) 0.07 mg/L (Daphnia magna) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | EC50 (96h) >230 mg/L (Pseudokirchnerella subcapitata) | LC50 (96h) >1580 mg/L (Oncorhynchus mykiss) | EC10 (3h) > 1000 mg/L (Activated sludge, domestic) | EC50 (48h) >1000 mg/L (Daphnia magna) |
| Isopropanol | 67-63-0 | EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (meanextinction value)(Scenedesmus quadricauda) | LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata) | TT (16h) 1050 mg/L (Pseudomonas putida) | EC50 (48 h)=2285 mg/L (Daphnia sp.) EC50 (24h) > 10,000 mg/L (Daphnia magna) |
| Potassium pyrophosphate | 7320-34-5 | EC50 (72h) > 100 mg/L (Desmodesmus subspicatus) | LC50 (96h) > 100 mg/L (Oncorhynchus mykiss) (similar substance) | No information available | EC50 (48h) > 100 mg/L (Daphnia magna) |
| Potassium hydroxide | 1310-58-3 | No information available | NOEC (24h) 28 mg/L (Lepomis macrochirus) | No information available | EC100 (48h) > 10 mg/L (Dreissena polymorpha)(similar substance) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Readily biodegradable (92.5% @ 28d) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | (84% @ 28d) |
| Isopropanol | 67-63-0 | Readily biodegradable (53% @ 5d) |
| Potassium pyrophosphate | 7320-34-5 | The methods for determining biodegradability are not applicable to inorganic substances. |
| Potassium hydroxide | 1310-58-3 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | Not Bioaccumulative; BCF=65.4 L/kg (similar substance) |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | -3.12 |
| Isopropanol | 67-63-0 | LogPow < 4.5 |
| Potassium pyrophosphate | 7320-34-5 | No information available |
| Potassium hydroxide | 1310-58-3 | Not Bioaccumulative |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Amides, coco, N,N-bis (hydroxyethyl) | 68603-42-9 | No information available |
| Benzenesulfonic acid, dimethyl-, sodium salt | 1300-72-7 | KOC = 1.0 (estimated) |
| Isopropanol | 67-63-0 | No information available |
| Potassium pyrophosphate | 7320-34-5 | Soluble in water |
| Potassium hydroxide | 1310-58-3 | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**

None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 09-Sep-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H272 - May intensify fire; oxidizer
H290 - May be corrosive to metals
H225 - Highly flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BARABLOK™

**Revision Date:** 30-Apr-2020 **Revision Number:** 28

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARABLOK™

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003477

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Powder | **Color** | Black |
| **Odor:** | Asphalt | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 5.8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | 315 °C / 599 °F Cleveland Open Cup (COC) |
| **Lower flammability limit** | 0.02 oz/ft3 |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.05 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | 1.7-1.9 |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | 2800 cPs |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | 2% |
| **Bulk Density** | 30 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide. Toxic fumes.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BARABUF®

**Revision Date:** 21-Aug-2017 **Revision Number:** 32

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARABUF®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003483

**Recommended use of the chemical and restrictions on use**

**Recommended Use** pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

**Contains**

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Wash with soap and water. Get medical attention if irritation persists. |
| **Ingestion** | Under normal conditions, first aid procedures are not required. If swallowed, observe victim for 24 hours; seek medical attention if indicated. |

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure

adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Wash hands after use. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool, dry location. Product has a shelf life of 12 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

**Appropriate engineering controls**

| | |
|---|---|
| **Engineering Controls** | A well ventilated area to control dust levels. |

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Not normally necessary.<br>However, if significant exposures are likely then wear a Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Not normally necessary. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Powder | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 10.5 |
| **Freezing Point / Range** | > 2100 °C |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |

| | |
|---|---|
| **Specific Gravity** | 3.56 |
| **Water Solubility** | Partly soluble |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers. Strong acids. Avoid halogens. Prolonged contact with aluminum.
**10.6. Hazardous decomposition products**
Metal oxides.

## 11. Toxicological Information

**Information on routes of exposure**

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |

**Symptoms related to exposure**

**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | May cause mild respiratory irritation. |
| **Eye Contact** | May cause mechanical irritation to eye. |
| **Skin Contact** | Not irritating to skin in rabbits. |
| **Ingestion** | May cause abdominal pain, vomiting, nausea, and diarrhea. |

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Allergic skin and/or respiratory reaction. Liver and kidney disorders.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

**12.2. Persistence and degradability**

**12.3. Bioaccumulative potential**

**12.4. Mobility in soil**

**12.6. Other adverse effects**
**Endocrine Disruptor Information**
This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**
Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**
Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |

| | |
|---|---|
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 21-Aug-2017

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BaraCor® 95

**Revision Date:** 18-Jun-2020 **Revision Number:** 49

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BaraCor® 95

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003499

**Recommended use of the chemical and restrictions on use**

**Recommended Use** pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Acute toxicity - Dermal | Category 4 - H312 |
| Acute inhalation toxicity - vapor | Category 4 - H332 |
| Skin Corrosion/Irritation | Category 1 - H314 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Acute Aquatic Toxicity | Category 3 - H402 |
| Chronic Aquatic Toxicity | Category 3 - H412 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H402 - Harmful to aquatic life
H412 - Harmful to aquatic life with long lasting effects

**Precautionary Statements**

**Prevention**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P391 - Collect spillage

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Monoethanolamine | 141-43-5 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Monoethanolamine | 141-43-5 | 60 - 100% | Acute Tox. 4 (H302)<br>Acute Tox. 4 (H312)<br>Acute Tox. 4 (H332)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>STOT SE 3 (H335)<br>Aquatic Acute 2 (H401)<br>Aquatic Chronic 3 (H412)<br>Flam. Liq. 4 (H227) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, move victim to fresh air and seek medical attention.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

**Skin** In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes severe skin burns and eye damage. May cause respiratory irritation. Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce harmful gases. Do not allow runoff to enter waterways.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation. Evacuate all persons from the area.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

### 6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

### 7.1. Precautions for safe handling

**Handling Precautions**

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**

Store away from acids. Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 36 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

### Control parameters - exposure standards, biological monitoring

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Monoethanolamine | 141-43-5 | TWA: 3 ppm<br>TWA: 7.5 mg/m$^3$<br>STEL: 6 ppm<br>STEL: 15 mg/m$^3$ | TWA: 3 ppm<br>STEL: 6 ppm |

### Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

### Personal protective equipment (PPE)

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. In high concentrations, supplied air respirator or a self-contained breathing apparatus. (EN137:2006, 2)

**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 8 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Rubber apron. Rubber boots.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid
**Color** Colorless
**Odor:** Amine
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 12 |
| **Freezing Point / Range** | -13 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 130 °C / 266 °F |
| **Flash Point** | 96 °C / 205 °F (PMCC) |
| **Evaporation rate** | 0.1 |
| **Vapor Pressure** | 0.2 mmHg @ 20°C |
| **Vapor Density** | 2.1 (air = 1) |
| **Specific Gravity** | 1.02 |
| **Water Solubility** | Miscible with water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | -1.9 |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids. Strong oxidizers.
**10.6. Hazardous decomposition products**
Ammonia. Carbon monoxide and carbon dioxide. Hydrocarbons.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe skin burns and eye damage. May cause respiratory irritation. Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Monoethanolamine | 141-43-5 | 1089 mg/kg-bw (rat) | 1025 mg/kg-bw (rabbit) | >1.3 mg/L (rat, 6 h, vapor) (saturated) |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Harmful if inhaled. Causes severe respiratory irritation.
**Eye Contact** Causes eye damage.
**Skin Contact** Harmful in contact with skin. Causes severe burns.
**Ingestion** Harmful if swallowed. Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Lung disorders. Liver and kidney disorders.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Monoethanolamine | 141-43-5 | Skin, rabbit: Corrosive to skin Causes severe skin burns |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Monoethanolamine | 141-43-5 | Eye, rabbit: Corrosive to eyes Causes severe eye irritation. Will damage tissue. |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Monoethanolamine | 141-43-5 | Did not cause sensitization on laboratory animals (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Monoethanolamine | 141-43-5 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Monoethanolamine | 141-43-5 | In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Monoethanolamine | 141-43-5 | No data of sufficient quality are available. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Monoethanolamine | 141-43-5 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Monoethanolamine | 141-43-5 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Monoethanolamine | 141-43-5 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Monoethanolamine | 141-43-5 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Monoethanolamine | 141-43-5 | EC50 (72 h) =2.5 mg/L (Pseudokirchneriella subcapitata)<br>EC50 (72 h) =24.7 mg/L | LC50 (96 h) =170 mg/L (Carassius auratus)<br>NOEC (14 d) >100 mg/L (Oryzias latipes) | No information available | EC50 (48 h) =65 mg/L (Daphnia magna)<br>NOEC (21 d) =0.85 mg/L (Daphnia magna) |

| | | | | | |
|---|---|---|---|---|---|
| | | (Phaeodactylum tricornutum) | | | |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Monoethanolamine | 141-43-5 | Readily biodegradable (92% @ 28d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Monoethanolamine | 141-43-5 | Log Pow =-1.91 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Monoethanolamine | 141-43-5 | KOC = 0.2725<br>KOC = 1.167 |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** UN2491
**UN proper shipping name:** Ethanolamine Solution
**Transport Hazard Class(es):** 8
**Packing Group:** III
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** UN2491
**UN proper shipping name:** Ethanolamine Solution
**Transport Hazard Class(es):** 8
**Packing Group:** III
**Environmental Hazards:** Not applicable
**EMS:** EmS F-A, S-B

**IATA/ICAO**

**UN Number** UN2491
**UN proper shipping name:** Ethanolamine Solution
**Transport Hazard Class(es):** 8
**Packing Group:** III
**Environmental Hazards:** Not applicable

**Special precautions during transport**

None

**HazChem Code**
2X

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 18-Jun-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter

NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BaraDeFoam® HP

**Revision Date:** 10-Apr-2020 **Revision Number:** 22

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BaraDeFoam® HP

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003504

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Defoamer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
None known

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Keep floors clean of spills.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 36 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally necessary.

**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Clear colorless to pale yellow |
| **Odor:** | Mild sweet | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | -15 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 182 °C / > 357 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | < 0.01 mmHg |
| **Vapor Density** | > 1 |
| **Specific Gravity** | 1 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible materials**

Strong oxidizers. Isocyanates. Strong acids.

**10.6. Hazardous decomposition products**

Aldehydes. Ketones. Organic acid vapors. Hydrocarbons. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | Heated vapors may cause respiratory irritation. |
| **Eye Contact** | May cause mild eye irritation. |
| **Skin Contact** | Prolonged or repeated contact may cause skin irritation. |
| **Ingestion** | None known. |

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 10-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BARAZAN® D PLUS

**Revision Date:** 30-Apr-2020 **Revision Number:** 33

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARAZAN® D PLUS

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003535

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Viscosifier

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Slippery when wet. Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Powder | **Color** | White to off white |
| **Odor:** | Slight | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 7 (1%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.6 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 204 °C / 400 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 1000000 |
| **VOC Content (%)** | No data available |
| **Bulk Density** | 52.4 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May impede respiration.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |

**Canadian Domestic Substances List (DSL)** All components listed on inventory or are exempt.

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID
WHO/FAO

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BARAZAN® D PLUS

**Revision Date:** 30-Apr-2020 **Revision Number:** 33

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARAZAN® D PLUS

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003535

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Viscosifier

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Slippery when wet. Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Powder | **Color** | White to off white |
| **Odor:** | Slight | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 7 (1%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.6 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 204 °C / 400 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 1000000 |
| **VOC Content (%)** | No data available |
| **Bulk Density** | 52.4 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May impede respiration.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |

**Canadian Domestic Substances List (DSL)** All components listed on inventory or are exempt.

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID
WHO/FAO

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BAROFIBRE®

**Revision Date:** 30-Apr-2020 **Revision Number:** 34

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BAROFIBRE®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003539

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Lost Circulation Material

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** Under normal conditions, first aid procedures are not required. Move person to fresh air.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
**Skin** Under normal conditions, first aid procedures are not required.
**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a dry location. Product has a shelf life of 36 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Safety glasses.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid Powder | **Color** | Tan |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 4.9 (1%) |
| **Freezing Point / Range** | 190 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | 193 °C / 380 °F (PMCC) |
| **Lower flammability limit** | 0.29 |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.3 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 24-31 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to | NA | No information available |

| | | |
|---|---|---|
| the competent authority | | |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

**Australian AICS Inventory** All components are listed on the AICS or are subject to a relevant exemption, permit, or

| | |
|---|---|
| | assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BAROID® RIG WASH

**Revision Date:** 13-Apr-2020 **Revision Number:** 21

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BAROID® RIG WASH

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003549

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Surfactant

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 1 - H318 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:** H318 - Causes serious eye damage

**Precautionary Statements**

**Prevention** P280 - Wear eye protection/face protection
**Response** P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 |
| Isopropanol | 67-63-0 |

**Other hazards which do not result in classification**
None known

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | 10 - 30% | Acute Tox. 4 (H302)<br>Eye Corr. 1 (H318) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | 5 - 10% | Acute Tox. 4 (H302)<br>Eye Corr. 1 (H318)<br>STOT RE 2 (H373)<br>Met. Corr. 1 (H290) |
| Isopropanol | 67-63-0 | 1 - 5% | Eye Irrit. 2 (H319)<br>STOT SE 3 (H336)<br>Flam. Liq. 2 (H225) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, move victim to fresh air and seek medical attention.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Seek immediate medical attention/advice. Suitable emergency eye wash facility should be immediately available
**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.
**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes mild skin irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Keep container closed when not in use. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Not applicable | Not applicable |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Not applicable | Not applicable |
| Isopropanol | 67-63-0 | TWA: 400 ppm<br>TWA: 983 mg/m$^3$<br>STEL: 500 ppm<br>STEL: 1230 mg/m$^3$ | TWA: 200 ppm<br>STEL: 400 ppm |

**Appropriate engineering controls**

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation. |

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Not normally needed. But if significant exposures are possible then the following respirator is recommended:<br>Organic vapor respirator. |
| **Hand Protection** | Impervious rubber gloves. |
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Clear blue |
| **Odor:** | Slight Alcohol | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9.5 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | > 100 °C / > 212 °F |
| **Flash Point** | > 104 °C / > 219 °F Cleveland Open Cup (COC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.025 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers.

**10.6. Hazardous decomposition products**

Oxides of sulfur. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes mild skin irritation.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | 500 mg/kg (Rat) | 2000 - 5000 mg/kg (similar substances) | No data available |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | 1658 mg/kg-bw (Rat) | No information available | >1 mg/L (rat, saturated mist, 4hr) (similar substances) |
| Isopropanol | 67-63-0 | 4700 mg/kg-bw (rat) | 12870 mg/kg-bw (rabbit) | 72.6 mg/L (Rat, 4h, vapor) |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Causes mild skin irritation.

**Ingestion** May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

Skin disorders.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Skin, rabbit: Causes mild skin irritation |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Not irritating to skin in rabbits. (40 - 80 % solution) |
| Isopropanol | 67-63-0 | Non-irritating to the skin (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Causes severe eye irritation which may damage tissue. |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Eye, rabbit: Causes serious eye damage (87 % solution) |
| Isopropanol | 67-63-0 | Causes moderate eye irritation (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Did not cause sensitization on laboratory animals (guinea pig) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |
| Isopropanol | 67-63-0 | Did not cause sensitization on laboratory animals (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | No information available |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | No information available |
| Isopropanol | 67-63-0 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects (similar substances) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects (similar substances) |
| Isopropanol | 67-63-0 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Did not show carcinogenic effects in animal experiments (similar substances) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Did not show carcinogenic effects in animal experiments (similar substances) |
| Isopropanol | 67-63-0 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Not regarded as a reproductive and developmental toxicant. (similar substances) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |
| Isopropanol | 67-63-0 | Animal testing did not show any effects on fertility. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | No information available |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | May cause respiratory irritation. (similar substances) No significant toxicity observed in animal studies at concentration requiring classification. |
| Isopropanol | 67-63-0 | May cause headache, dizziness, and other central nervous system effects. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Causes damage to organs through prolonged or repeated exposure if inhaled: Respiratory system |
| Isopropanol | 67-63-0 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Not applicable |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Not applicable |
| Isopropanol | 67-63-0 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | EC50 0.5 - 3.8 mg/L | LC50 (96h) 3900 mg/L (Pimephales promelas) | No information available | EC50 (96h) 2100 ug/L (Daphnia magna) |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | EC50 (72 h) >100 mg/L (Desmodesmus subspicatus) | LC50 (96 h) 121 mg/L (Lepomis macrochirus) NOAEL (96 h) 24 mg/L (Lepomis macrochirus) | No information available | EC50 (24 h) 610 mg/L (Daphnia magna) |

| | | | | | |
|---|---|---|---|---|---|
| Isopropanol | 67-63-0 | EC50 (72h) > 1000 mg/L (Desmodesmus subspicatus) EC50 (7d) 1800 mg/L (meanextinction value)(Scenedesmus quadricauda) | LC50 (96h) 9640 mg/L (Pimephales promelas) LC50 (7d) 7060 mg/L (Poecilia reticulata) | TT (16h) 1050 mg/L (Pseudomonas putida) | EC50 (48 h)=2285 mg/L (Daphnia sp.) EC50 (24h) > 10,000 mg/L (Daphnia magna) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | No information available |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | (10% @ 28d) |
| Isopropanol | 67-63-0 | Readily biodegradable (53% @ 5d) |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | Log Kow = 4 |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | Log Pow Weighted average3.4 |
| Isopropanol | 67-63-0 | LogPow < 4.5 |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Polyethylene glycol monoundecyl | 34398-01-1 | No information available |
| Ethylenediaminetetraacetic acid, tetrasodium salt | 64-02-8 | No information available |
| Isopropanol | 67-63-0 | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 13-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H225 - Highly flammable liquid and vapor
H302 - Harmful if swallowed
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H373 - May cause damage to organs through prolonged or repeated exposure

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
ECHA C&L
NZ CCID
OSHA

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CAUSTIC SODA

**Revision Date:** 09-May-2017 **Revision Number:** 34

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CAUSTIC SODA

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003599

**Recommended use of the chemical and restrictions on use**

**Recommended Use** pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Skin Corrosion/Irritation | Category 1 - H314 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |
| Substances/mixtures corrosive to metal. | Category 1 - H290 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary Statements**

**Prevention**
P234 - Keep only in original packaging.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/eye protection/face protection

**Response**
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P363 - Wash contaminated clothing before reuse
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P390 - Absorb spillage to prevent material damage
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner.

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Sodium hydroxide | 1310-73-2 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Sodium hydroxide | 1310-73-2 | 60 - 100% | Skin Corr. 1A (H314)<br>Eye Corr. 1 (H318)<br>STOT SE 3 (H335)<br>Met. Corr. 1 (H290) |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, move victim to fresh air and seek medical attention. |
| **Eyes** | Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention. |
| **Skin** | In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause respiratory irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

May form explosive mixtures with strong acids. Reaction with steel and certain other metals generates flammable hydrogen gas.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas. Consult local authorities.

**6.3. Methods and material for containment and cleaning up**

Neutralize to pH of 6-8. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from acids. Store in a cool, dry location. Store locked up.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Sodium hydroxide | 1310-73-2 | 2 mg/m³ | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area. Localized ventilation should be used to control dust levels.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product.

**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. Butyl rubber gloves. (>= 0.7 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Full protective chemical resistant clothing. Rubber boots

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** White to off white
**Odor:** Odorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 14 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | 1390 °C / 2535 °F |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.13 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**Molecular Weight** 40

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Contact with acids. Peroxides. Halogenated compounds. Prolonged contact with aluminum, lead, or zinc may liberate flammable hydrogen.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause respiratory irritation.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Sodium hydroxide | 1310-73-2 | Not applicable due to corrosivity of the substance. | Not applicable due to corrosivity of the substance. | Not applicable due to corrosivity of the substance. |

**Immediate, delayed and chronic health effects from exposure**
**Inhalation** Causes severe respiratory irritation.
**Eye Contact** Causes severe eye irritation which may damage tissue.
**Skin Contact** Causes severe burns.
**Ingestion** Causes burns of the mouth, throat and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | Causes severe burns |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | Causes severe eye burns (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | Did not cause sensitization on laboratory animals (guinea pig) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | Did not show mutagenic effects in animal experiments In vitro tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No data of sufficient quality are available. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No significant toxicity observed in animal studies at concentration requiring classification. Not applicable due to corrosivity of the substance. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Sodium hydroxide | 1310-73-2 | No information available | LC50(48h) 189 mg/L (Leuciscus idus melanotus)<br>LLC50(48h) 189 mg/L (Leuciscus melanotus)<br>LC50(24h) 145 mg/L (Poecilia reticulate)<br>LC50(96h) 125 mg/L (Gambusia affinis)<br>LOEL(150 d) = 25 mg/L (Lebistes reticulatus) | No information available | EC50 (48h) 40.4 mg/L (Ceriodaphnia sp.) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Sodium hydroxide | 1310-73-2 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**
Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | UN1823 |
| **UN proper shipping name:** | Sodium Hydroxide, Solid |
| **Transport Hazard Class(es):** | 8 |
| **Packing Group:** | II |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | UN1823 |
| **UN proper shipping name:** | Sodium Hydroxide, Solid |
| **Transport Hazard Class(es):** | 8 |
| **Packing Group:** | II |
| **Environmental Hazards:** | Not applicable |
| **EMS:** | EmS F-A, S-B |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | UN1823 |
| **UN proper shipping name:** | Sodium Hydroxide, Solid |
| **Transport Hazard Class(es):** | 8 |
| **Packing Group:** | II |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
2W

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 09-May-2017

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# DEXTRID® LTE

**Revision Date:** 30-Apr-2020 **Revision Number:** 33

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** DEXTRID® LTE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003615

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** None

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential. Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid dust accumulations. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 12 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.

**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Powder
**Color** White to off white
**Odor:** Musty
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | 10 | |
| **Freezing Point / Range** | No data available | |
| **Melting Point / Range** | No data available | |
| **Pour Point / Range** | No data available | |
| **Boiling Point / Range** | No data available | |
| **Flash Point** | No data available | |
| **Evaporation rate** | No data available | |
| **Vapor Pressure** | No data available | |
| **Vapor Density** | No data available | |
| **Specific Gravity** | 1.5 | |
| **Water Solubility** | Soluble in water | |
| **Solubility in other solvents** | No data available | |
| **Partition coefficient: n-octanol/water** | No data available | |
| **Autoignition Temperature** | No data available | |
| **Decomposition Temperature** | No data available | |
| **Viscosity** | No data available | |
| **Explosive Properties** | No information available | |
| **Oxidizing Properties** | No information available | |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
Keep away from heat, sparks and flame.
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Oxides of sulfur. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to | NA | No information available |

| | | |
|---|---|---|
| the competent authority | | |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

**Australian AICS Inventory** All components are listed on the AICS or are subject to a relevant exemption, permit, or

| | |
|---|---|
| | assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

**Product Trade Name:** **DRIL-N-SLIDE™**

**Revision Date:** 27-Jun-2018 **Revision Number:** 20

## 1. Identification

### 1.1. Product Identifier

| | |
|---|---|
| **Product Trade Name:** | DRIL-N-SLIDE™ |
| **Synonyms** | None |
| **Chemical Family** | Fatty Acid Ester |
| **Internal ID Code** | HM003622 |

### 1.2 Recommended use and restrictions on use

| | |
|---|---|
| **Application** | Lubricant |
| **Uses advised against** | No information available |

### 1.3 Manufacturer's Name and Contact Details

Halliburton Energy Services, Inc.
645 - 7th Ave SW Suite 1800
Calgary, AB
T2P 4G8
Canada
Telephone: 1-403-231-9300

**Manufacturer/Supplier**
Baroid Fluid Services
Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000

**Prepared By**
Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

### 1.4. Emergency telephone number

**Emergency Telephone Number** 1-866-519-4752 or 1-760-476-3962
Global Incident Response Access Code: 334305
Contract Number: 14012

## 2. Hazard Identification

### 2.1 Classification of the substance or mixture

**As adopted by the competent authority, this product does not require an SDS or hazard warning label.**

Not classified

### 2.2. Label Elements

**Hazard Pictograms**

**Signal Word:** Not Classified

**Hazard Statements** Not Hazardous

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

### 2.3 Other hazards which do not result in classification

None known

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Canada | HMIRA Registry Number | Filing Date | Decision Granted Date |
|---|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 80 - 100% | Not classified | Not applicable | Not applicable | Not applicable |

The exact percentage (concentration) of the composition has been withheld as proprietary.

## 4. First aid measures

### 4.1. Description of first aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water.

**Ingestion** Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration. Rinse mouth. Never give anything by mouth to an unconscious person.

### 4.2 Most important symptoms/effects, acute and delayed

No significant hazards expected.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## 5. Fire-fighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

### 5.2 Specific hazards arising from the substance or mixture

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

### 5.3 Special protective equipment and precautions for fire-fighters

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.
See Section 8 for additional information

### 6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

### 6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and Storage

### 7.1. Precautions for safe handling

**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Information**
Keep container closed when not in use. Product has a shelf life of 36 months.

## 8. Exposure Controls/Personal Protection

### 8.1 Occupational Exposure Limits

| Substances | CAS Number | OSHA PEL-TWA | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

### 8.2 Appropriate engineering controls

**Engineering Controls** Use in a well ventilated area.

### 8.3 Individual protection measures, such as personal protective equipment

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally necessary.

**Hand Protection** Impervious rubber gloves. Nitrile gloves. Neoprene gloves. Butyl rubber gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Safety glasses.
**Other Precautions** None known.

## 9. Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

**Physical State:** Liquid **Color** Yellowish
**Odor:** Bland **Odor** No information available

| Property<br>Remarks/ - Method | Values<br>**Threshold:** |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | < -30 °C / < -22 °F |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | 240 °C / 464 °F |
| **Flash Point** | 147 °C / 296 °F PMCC |
| **Flammability (solid, gas)** | No data available |
| **Upper flammability limit** | No data available |
| **Lower flammability limit** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 0.86 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | 1.69 |
| **Autoignition Temperature** | 240 °C / 464 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | 0% |
| **Liquid Density** | 7.18 lbs/gal |
| **Bulk Density** | 53.69 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.

**10.2. Chemical stability**
Stable

**10.3. Possibility of hazardous reactions**
Will Not Occur

**10.4. Conditions to avoid**
None anticipated

**10.5. Incompatible materials**
Strong oxidizers.

**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**11.1 Information on likely routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**11.2 Symptoms related to the physical, chemical and toxicological characteristics**
**Acute Toxicity**
**Inhalation** May cause mild respiratory irritation.

**Eye Contact** May cause mild eye irritation.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** Not determined

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

## 11.3 Toxicity data

### Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | |

## 12. Ecological Information

### 12.1. Toxicity

**Product Ecotoxicity Data**

No data available

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Log Pow |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.5 Other adverse effects

No information available

## 13. Disposal Considerations

**13.1. Waste treatment methods**

**Disposal methods** Bury in a licensed landfill according to federal, state, and local regulations.
**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. Transport Information

**Canadian TDG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**US DOT**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable
**Special Precautions for User** None

## 15. Regulatory Information

### Canadian Regulations

**Canadian Domestic Substances List (DSL)** All components listed on inventory or are exempt.

### US Regulations

**US TSCA Inventory** All components listed on inventory or are exempt.

**TSCA Significant New Use Rules - S5A2**

| Substances | CAS Number | TSCA Significant New Use Rules - S5A2 |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable |

**EPA SARA Title III Extremely Hazardous Substances**

| Substances | CAS Number | EPA SARA Title III Extremely Hazardous Substances |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable |

**EPA SARA (311,312) Hazard Class**
None

**EPA SARA (313) Chemicals**

| Substances | CAS Number | Toxic Release Inventory (TRI) - Group I | Toxic Release Inventory (TRI) - Group II |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**EPA CERCLA/Superfund Reportable Spill Quantity**

| Substances | CAS Number | CERCLA RQ |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable |

**EPA RCRA Hazardous Waste Classification**
If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**NFPA Ratings:** Health 0, Flammability 0, Reactivity 0
**HMIS Ratings:** Health 0, Flammability 0, Physical Hazard 0 , PPE: B

## 16. Other information

**Preparation Information**

**Prepared By** Chemical Stewardship
Telephone: 1-281-871-6107
e-mail: fdunexchem@halliburton.com

**Revision Date:** 27-Jun-2018

**Reason for Revision** SDS sections updated:
1

**Additional information**
For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key or legend to abbreviations and acronyms used in the safety data sheet**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
ErC50 – Effective Concentration growth rate 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OEL – Occupational Exposure Limit
PEL – Permissible Exposure Limit

ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
UN – United Nations
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# EZ-MUD®

**Revision Date:** 09-Sep-2020 **Revision Number:** 44

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** EZ-MUD®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003643

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Shale Inhibitor

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 |
| Ethoxylated branched C13 alcohol | 78330-21-9 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | 10 - 30% | Asp. Tox. 1 (H304) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | 1 - 5% | Acute Tox. 4 (H302)<br>Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>Aquatic Acute 2 (H401)<br>Aquatic Chronic 3 (H412) |

## 4. First aid measures

**Description of necessary first aid measures**
**Inhalation** If inhaled, move victim to fresh air and seek medical attention.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated shoes and discard.
**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Causes mild skin irritation.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Use water spray to cool fire exposed surfaces.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use. Store locked up. Product has a shelf life of 12 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Not applicable | Not applicable |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator with a dust/mist filter. (A2P2/P3) In high concentrations, supplied air respirator or a self-contained breathing apparatus.
**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact

| | |
|---|---|
| | (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 8 mm thickness)<br>This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. |
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | White to gray |
| **Odor:** | Mild hydrocarbon | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6-8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 175 °C / 347 °F |
| **Flash Point** | > 93 °C / > 200 °F (PMCC) |
| **Evaporation rate** | < 1 |
| **Vapor Pressure** | 0.002 mmHg |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1 |
| **Water Solubility** | Partly soluble |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | > 200 °C / 392 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
Keep away from heat, sparks and flame.
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes mild skin irritation.

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | >5000 mg/kg-bw (rat) (similar substance) | >2000 mg/kg-bw (rabbit) (similar substance) | >5.2 mg/L (rat, 4 h, vapor) (similar substance) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | 1600 mg/kg-bw (rat) (similar substance) | >2000 mg/kg-bw (rabbit) (similar substance) | >0.22 mg/L (rat, 4h, aerosol, saturated) (similar substance) |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** In vitro tests indicate that the product is not an eye irritant.

**Skin Contact** Causes mild skin irritation.

**Ingestion** May cause mild gastric distress.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

Lung disorders.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Non-irritating to the skin (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Skin, rabbit: Causes moderate skin irritation. (similar substances) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Non-irritating to rabbit's eye (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Eye, rabbit: Causes severe eye irritation which may damage tissue. (similar substances) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Based on available data, the classification criteria are not met. |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Based on available data, the classification criteria are not met. |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances) |
| Ethoxylated branched C13 | 78330-21-9 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar |

| | | |
|---|---|---|
| alcohol | | substances) |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Did not show carcinogenic effects in animal experiments (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Did not show carcinogenic effects in animal experiments (similar substances) |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | No significant toxicity observed in animal studies at concentration requiring classification. |
| Ethoxylated branched C13 alcohol | 78330-21-9 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Based on available data, the classification criteria are not met. |

## 12. Ecological Information

### Ecotoxicity

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | ErL50(72 h)>10000 mg/L (Skeletonema costatum) | LC50(96 h)>10000 mg/L (Scophthalmus maximus) NOELR(28 d)>1000 mg/L (fish) | No information available | LC50(48 h)>10000 mg/L (Acartia tonsa) NOELR(21 d)=1000 mg/L (Daphnia magna) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | IC50(72 h)=1-10 mg/L (Desmodesmus subspicatus) | LC50(96 h)=1-10 mg/L (Cyprinus carpio) | No information available | EC50(48 h)=1-10 mg/L (Daphnia magna) NOAEC (21d) 0.77 mg/L (Daphnia magna) |

### 12.2. Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | Readily biodegradable (68.1% @ 28d) |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Readily biodegradable (> 60% @ 28d) |

### 12.3. Bioaccumulative potential

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | No information available |
| Ethoxylated branched C13 alcohol | 78330-21-9 | Not Bioaccumulative; BCF = 12.7 - 237 L/Kg |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|

| | | |
|---|---|---|
| Hydrotreated light petroleum distillate | 64742-47-8 | No information available |
| Ethoxylated branched C13 alcohol | 78330-21-9 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 09-Sep-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# EZ-MUD® DP

**Revision Date:** 20-Nov-2020 **Revision Number:** 28

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** EZ-MUD® DP

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003644

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Shale Inhibitor

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Slippery when wet.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment. Slippery when wet.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Mild | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6-8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 0.8 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 40 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.
**Eye Contact** May cause mild eye irritation.
**Skin Contact** May cause mild skin irritation.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 20-Nov-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# GEM™ CP

**Revision Date:** 15-Mar-2017 **Revision Number:** 21

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** GEM™ CP

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003659

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Shale stabilizer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier**

Multi-Chem Mintech
1 Ward Road
East Rockingham
WA 6168
Australia

Telephone Number: 61 (08) 9419 5300
Fax Number: 61 (08) 9439 1055
Emergency Telephone Number: + 61 1 800 686 951

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute inhalation toxicity - vapor | Category 4 - H332 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:** H332 - Harmful if inhaled

**Precautionary Statements**

**Prevention** P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area

**Response** P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell

**Storage** None

**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 |

**Other hazards which do not result in classification**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | 60 - 100% | Acute Tox. 4 (H332) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Harmful if inhaled.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid breathing vapors. Avoid breathing mist. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Use appropriate protective equipment. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store away from acids. Store away from alkalis. Keep container closed when not in use. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Organic vapor respirator with a dust/mist filter. (A2P2/P3)

**Hand Protection** Impervious rubber gloves. Polyvinylchloride gloves. Neoprene gloves.

| | |
|---|---|
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Clear light yellow |
| **Odor:** | Mild | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 5-7.5 (10%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 93 °C / > 200 °F PMCC |
| **Evaporation rate** | < 0.1 |
| **Vapor Pressure** | < 0.01 mmHg |
| **Vapor Density** | > 1 |
| **Specific Gravity** | 1.02 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | |
| **Autoignition Temperature** | 370 °C / 698 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 405 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers. Strong acids. Strong alkalis.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Harmful if inhaled.

**Numerical measures of toxicity**

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | >5000 mg/kg-bw (rat) | >8000 mg/kg-bw (rabbit) | >1 - <5 mg/L (rat, 4 h, aerosol) |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Harmful if inhaled.
**Eye Contact** Non-irritating to rabbit's eye
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders. Eye ailments.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | Not a dermal irritant Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | Non-irritating to the eye |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No sensitization responses were observed (similar substances) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No information available |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | Did not show carcinogenic effects in animal experiments (similar substances) |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No data of sufficient quality are available. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No data of sufficient quality are available. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Methyloxirane polymer with | 9038-95-3 | Not applicable |

| | | |
|---|---|---|
| oxirane, monbutyl ether | | |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | EC50(72 h)=465 mg/L (Skeletonema costatum) | LC50(96 h)=3200 mg/L (Pimephales promelas)<br>LC50(96 h)>1800 mg/L (Scophthalmus maximus) | No information available | EC50(48 h)=4400 mg/L (Daphnia magna)<br>LC50(48 h)=356 mg/L (Acartia tonsa) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | (24% @ 20d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | Log Pow=0.353 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Methyloxirane polymer with oxirane, monbutyl ether | 9038-95-3 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 15-Mar-2017

**Revision Note**
SDS sections updated: 2

**Full text of H-Statements referred to under sections 2 and 3**
H332 - Harmful if inhaled

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%

LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# GEM™ GP

**Revision Date:** 20-Jul-2020 **Revision Number:** 50

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** GEM™ GP

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003660

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Shale stabilizer

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 1 - H318 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:** H318 - Causes serious eye damage

**Precautionary Statements**

**Prevention** P280 - Wear eye protection/face protection
**Response** P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | 60 - 100% | Eye Corr. 1 (H318) |

## 4. First aid measures

**Description of necessary first aid measures**
**Inhalation** If inhaled, move victim to fresh air and seek medical attention.
**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.
**Skin** Wash with soap and water. Get medical attention if irritation persists.
**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Causes severe eye irritation which may damage tissue.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse. Ensure adequate ventilation. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store away from acids. Keep container closed when not in use.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be

| | |
|---|---|
| | performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator. |
| **Hand Protection** | Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 8 mm thickness)<br>This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. |
| **Skin Protection** | Rubber apron. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Yellow to brown |
| **Odor:** | Mild | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6.5 - 9 |
| **Freezing Point / Range** | -45 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 126 °C / 260 °F |
| **Flash Point** | 166 °C / 330 °F (PMCC) |
| **Upper flammability limit** | 3.8 % |
| **Lower flammability limit** | 0.8 % |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 0.002 mmHg |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.012 |
| **Water Solubility** | Miscible with water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 203 °C / 397.4 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | 10-11 cP @ 20°C |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

Keep away from heat, sparks and flame.

**10.5. Incompatible materials**

Strong oxidizers. Mineral acids.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | > 5000 mg/kg (Rat)<br>> 2000 mg/kg (Rat) | 6540 mg/kg (Rat)<br>3540 mg/kg (Rabbit) (similar substance)<br>> 2000 mg/kg (Rat) (similar substance) | > 2.6 mg/L (Rat) 4h (similar substance)<br>> 2000 mg/L (Rat) 1h (similar substance) |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** Causes severe eye irritation which may damage tissue.

**Skin Contact** Not irritating to skin in rabbits.

**Ingestion** Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

Lung disorders. Skin disorders.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Non-irritating to the skin (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Eye, rabbit: Causes severe eye irritation which may damage tissue. |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Did not cause sensitization on laboratory animals (guinea pig) (similar substances) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | In vivo tests did not show mutagenic effects. In vitro tests did not show mutagenic effects. (similar substances) |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|

| | | |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | No information available |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Not regarded as a reproductive and developmental toxicant. Did not show teratogenic effects in animal experiments. (similar substances) |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | EC50(72h): 391 mg/L (growth rate) (Skeletonema costatum) | EC50: 475 ppm (Abra alba)<br>LC50(96h): >1800 mg/L (Scophthalmus maximus) | IC50(16h): > 5000 mg/L (Growth inhibition, Activated sludge) (similar substance – 2-(2-(2-butoxyethoxy)ethoxy)ethanol)<br>EC10(30m): > 1995 mg/L (respiration rate, activated sludge) (similar substance – 2-(2-(2-butoxyethoxy)ethoxy)ethanol) | TLM48: 310 mg/l (Acartia tonsa)<br>EC50(48h): > 3200 mg/L (Daphnia magna) (similar substance – ethanol, 2-butoxy-, manufacture of, by-products from) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Readily biodegradable (68% @ 28d) |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | 0.436 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Polyethylene glycol butyl ether | 9004-77-7 | Log Kow < 4.5 |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**
Follow all applicable national or local regulations.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 20-Jul-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H318 - Causes serious eye damage

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SOURSCAV®

**Revision Date:** 09-Sep-2020 **Revision Number:** 31

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SOURSCAV®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003675

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Hydrogen Sulfide Scavenger

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
May be harmful if swallowed.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid creating and breathing dust. Ensure adequate ventilation.

**6.2. Environmental precautions**
None known.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from acids. Store away from oxidizers. Store in a cool, dry location. Keep container closed when not in use. Store away from direct sunlight. Product has a shelf life of 24 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** A well ventilated area to control dust levels.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** Light yellow-green
**Odor:** Mild burnt sugar
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 4-5.5 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.73 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers. Strong acids.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide. Metal oxides.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
May be harmful if swallowed.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** May be harmful if swallowed. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**
Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 09-Sep-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# LIME

**Revision Date:** 21-Apr-2017 **Revision Number:** 49

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** LIME

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003683

**Recommended use of the chemical and restrictions on use**

**Recommended Use** pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Skin Corrosion/Irritation | Category 2 - H315 |
| Serious Eye Damage/Irritation | Category 1 - H318 |
| Specific Target Organ Toxicity - (Single Exposure) | Category 3 - H335 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary Statements**

**Prevention**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/eye protection/face protection

**Response**
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER/doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Calcium hydroxide | 1305-62-0 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Calcium hydroxide | 1305-62-0 | 60 - 100% | Skin Irrit. 2 (H315)<br>Eye Corr. 1 (H318)<br>STOT SE 3 (H335) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

| | |
|---|---|
| **Skin** | Remove contaminated clothing and launder before reuse. In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**

Causes severe eye irritation which may damage tissue. Causes skin irritation. May cause respiratory irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Not applicable

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from acids. Store in a cool, dry location. Store locked up.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Calcium hydroxide | 1305-62-0 | TWA: 5 mg/m³ | TWA: 5 mg/m³ |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)
This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** White
**Odor:** Odorless
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | 12.2 | |
| **Freezing Point / Range** | No data available | |
| **Melting Point / Range** | No data available | |
| **Boiling Point / Range** | No data available | |
| **Flash Point** | No data available | |
| **Evaporation rate** | No data available | |
| **Vapor Pressure** | No data available | |
| **Vapor Density** | No data available | |
| **Specific Gravity** | 2.24 | |
| **Water Solubility** | Partly soluble | |
| **Solubility in other solvents** | No data available | |
| **Partition coefficient: n-octanol/water** | No data available | |
| **Autoignition Temperature** | No data available | |
| **Decomposition Temperature** | No data available | |
| **Viscosity** | No data available | |
| **Explosive Properties** | No information available | |
| **Oxidizing Properties** | No information available | |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 74.1 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes severe eye irritation which may damage tissue. Causes skin irritation. May cause respiratory irritation.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Calcium hydroxide | 1305-62-0 | 7340 mg/kg-bw (rat) | >2500 mg/kg-bw (rabbit) | No data available |

**Immediate, delayed and chronic health effects from exposure**
**Inhalation** Causes moderate respiratory irritation.
**Eye Contact** Causes severe eye irritation which may damage tissue.
**Skin Contact** Causes skin irritation.
**Ingestion** Irritation of the mouth, throat, and stomach.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Causes moderate skin irritation. (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Causes severe eye irritation (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Not regarded as a sensitizer. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | No data of sufficient quality are available. |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | In vitro tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Did not show carcinogenic effects in animal experiments (similar substances) |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | May cause respiratory irritation. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Calcium hydroxide | 1305-62-0 | No information available | LC50 (96 h) =50.6 mg/L (Oncorhynchus mykiss)<br>LC50 (96 h) =457 mg/L (Gasterosteus aculeatus) | No information available | EC50 (48 h) =49.1 mg/L (Daphnia magna)<br>EC50 (96 h) =158 mg/L (Crangon septemspinosa)<br>NOAEC (14 d) =32 mg/L (Crangon septemspinosa) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Log Pow |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Calcium hydroxide | 1305-62-0 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Empty container completely. Transport with all closures in place. Return for reuse or dispose in a sanitary landfill according to

national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 21-Apr-2017

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# N-DRIL® HT PLUS

**Revision Date:** 30-Apr-2020 **Revision Number:** 33

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** N-DRIL® HT PLUS

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003699

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | NF | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential. Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid dust accumulations. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a cool, dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Starch | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.5 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 30-35 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
Keep away from heat, sparks and flame.
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** None known.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List** | All components listed on inventory or are exempt. |

**(DSL)**

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Apr-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all

conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# OXYGON™

**Revision Date:** 25-Mar-2020 **Revision Number:** 31

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** OXYGON™

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003723

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Oxygen Scavenger

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid creating or inhaling dust. Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 36 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid Powder
**Color** White
**Odor:** Odorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 5.5-8 (5%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Upper flammability limit** | 0.5 oz/ft3 |
| **Lower flammability limit** | 0.28 oz/ft3 |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.2 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 640 °C / 1184 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 45-65 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to | NA | No information available |

| | | |
|---|---|---|
| the competent authority | | |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

**Australian AICS Inventory** All components are listed on the AICS or are subject to a relevant exemption, permit, or

| | |
|---|---|
| | assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 25-Mar-2020

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# Potassium Chloride

**Revision Date:** 30-Mar-2017 **Revision Number:** 20

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** Potassium Chloride

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003741

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Brine

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | NF | Not Applicable |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Wash with soap and water. Get medical attention if irritation persists. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**

No significant hazards expected.

**Medical Attention and Special Treatment**

| | |
|---|---|
| **Notes to Physician** | Treat symptomatically |

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Not applicable

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Not applicable

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool, dry location. Product has a shelf life of 60 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White to gray |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 9.2 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.99 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 74.5 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Numerical measures of toxicity**

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** None known.
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**
The methods for determining biodegradability are not applicable to inorganic substances.

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |

| | |
|---|---|
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 30-Mar-2017

**Revision Note**
SDS sections updated: 1 7

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained

from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SAPP

**Revision Date:** 11-Feb-2021 **Revision Number:** 26

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SAPP

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003755

**Recommended use of the chemical and restrictions on use**

**Recommended Use** ThinnerControl Agent

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Acute Oral Toxicity | Category 4 - H302 |
| Serious Eye Damage/Irritation | Category 2 - H319 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:**
H302 - Harmful if swallowed
H319 - Causes serious eye irritation

**Precautionary Statements**

**Prevention**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear eye protection/face protection

**Response**
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Storage** None

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Sodium acid pyrophosphate | 7758-16-9 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | 60 - 100% | Acute Tox. 4 (H302)<br>Eye Irrit. 2A (H319) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**
Causes eye irritation. Harmful if swallowed.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store in a cool, dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

| | |
|---|---|
| **Personal Protective Equipment** | If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace. |
| **Skin Protection** | Wear protective clothing appropriate for the work environment. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | Do not allow material to contaminate ground water system. |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 4-4.6 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.04 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 223.96 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**

Oxides of phosphorus.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes eye irritation. Harmful if swallowed.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | 1800 mg/kg (Rat)<br>2650 mg/kg (Mouse)<br>3600 mg/kg (Rat) | > 2000 mg/kg (Rat)<br>> 7940 mg/kg (Rabbit) | 0.58 mg/L (Rat) 4h<br>> 0.58 mg/L (Mouse) 4h |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** Causes eye irritation.

**Skin Contact** May cause mild skin irritation.

**Ingestion** Harmful if swallowed.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

None known.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Non-irritating to the skin (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Irritating to eyes (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Did not cause sensitization on laboratory animals (mouse) |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No data of sufficient quality are available. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No information available |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No information available | LC50 (48h) > 1500 mg/L (Goldorfen) | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Sodium acid pyrophosphate | 7758-16-9 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 11-Feb-2021

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H302 - Harmful if swallowed
H319 - Causes serious eye irritation

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# STEELSEAL®

**Revision Date:** 11-Dec-2019 **Revision Number:** 31

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** STEELSEAL®

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM003768

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Lost Circulation Material

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Obtain immediate medical attention.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Combustible dust when in finely divided and highly suspended state.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid creating or inhaling dust. Avoid dust accumulations. Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and dark procedures for low oxygen levels should be taken to ensure ample oxygen availability. Ensure adequate ventilation. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Store in a dry location. Keep from heat, sparks, and open flames. Product has a shelf life of 60 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** A well ventilated area to control dust levels.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** Dark gray
**Odor:** Odorless
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | No data available |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 4200 °C / 7592 °F |
| **Flash Point** | > 356 °C / > 673 °F |
| **Lower flammability limit** | 0.07-0.12 oz/ft3 |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 1 |
| **Vapor Density** | 0.4 |
| **Specific Gravity** | 1.75 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |
| **Bulk Density** | 38-45 lbs/ft3 |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids. Strong alkalis.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| substances in concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** May cause mild gastric distress.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
Skin disorders.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**
This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

### Safe handling and disposal methods

Dispose in accordance with local regulations.

### Disposal of any contaminated packaging

Follow all applicable national or local regulations.

### Environmental regulations

Not applicable

## 14. Transport Information

### Transportation Information

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

### Special precautions during transport

None

### HazChem Code

None Allocated

## 15. Regulatory Information

### Safety, health and environmental regulations specific for the product

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |

| | |
|---|---|
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 11-Dec-2019

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CITRIC ACID

**Revision Date:** 26-Feb-2018 **Revision Number:** 37

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CITRIC ACID

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM004421

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Scale Remover; pH Control

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 2 - H319 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:** H319 - Causes serious eye irritation

**Precautionary Statements**

**Prevention** P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/face protection

**Response** P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Storage** None

**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Citric acid | 77-92-9 |

**Other hazards which do not result in classification**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Citric acid | 77-92-9 | 60 - 100% | Eye Irrit. 2A (H319) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin** For skin contact, wipe away excess material with dry towel. Then wash affected areas with plenty of water, and soap if available, for several minutes. Get medical attention if irritation occurs.

**Ingestion** Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

**Symptoms caused by exposure**

Causes eye irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store in a cool, dry location. Product has a shelf life of 60 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Citric acid | 77-92-9 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

| | |
|---|---|
| **Respiratory Protection** | If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.<br>Dust/mist respirator. (N95, P2/P3) |
| **Hand Protection** | Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 0.35 mm thickness)<br>This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 1.8 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | 153 °C / 307.4 °F |
| **Boiling Point / Range** | Decomposes |
| **Flash Point** | 345 °C / 653 °F |
| **Upper flammability limit** | 65 |
| **Lower flammability limit** | % |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 0.00000221 Pa |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.66 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | -1.61 to -1.80 |
| **Autoignition Temperature** | 1010 °C / 1832 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 192.12 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong alkalis.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
Causes eye irritation.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Citric acid | 77-92-9 | 5400 mg/kg (Rat)<br>5790 mg/kg (Mouse)<br>11,700 mg/kg (Rat) | > 2000 mg/kg | No data available |

**Immediate, delayed and chronic health effects from exposure**
**Inhalation** May cause mild respiratory irritation.
**Eye Contact** Causes eye irritation.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Citric acid | 77-92-9 | Not irritating to skin in rabbits. |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Citric acid | 77-92-9 | Causes moderate eye irritation |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Citric acid | 77-92-9 | Patch test on human volunteers did not demonstrate sensitization properties |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Citric acid | 77-92-9 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Citric acid | 77-92-9 | Did not show mutagenic effects in animal experiments |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Citric acid | 77-92-9 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|

| | | |
|---|---|---|
| Citric acid | 77-92-9 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Citric acid | 77-92-9 | No data of sufficient quality are available. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Citric acid | 77-92-9 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Citric acid | 77-92-9 | No adverse health effects are expected from swallowing. |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Citric acid | 77-92-9 | EC50 (72h) 18000 mg/L (Chlorella vulgaris)<br>NOEC (8d) 425 mg/L (cell density) (Scenedesmus quadricauda)<br>LOEC (8d) >80 mg/L (Microcystis aeruginosa) | LC50 (96h) 1516 mg/L (Lepomis macrochirus)<br>LC50 (48h) 440 mg/L (Leuciscus idus melanotus)<br>LC50 (96h) >100 mg/L (Pimephales promelas) | TT (72h) 485 mg/L (Entosiphon sulcatum) | TLM96 100-330 ppm (Crangon crangon)<br>EC50 (24h) 1535 mg/L (Daphnia magna)<br>LC50 (48h) 160 mg/L (Daphnia magna)<br>EC50 (48h) >50 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Citric acid | 77-92-9 | Readily biodegradable (97% @ 28d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Citric acid | 77-92-9 | -1.61 to -1.80 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Citric acid | 77-92-9 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 26-Feb-2018

**Revision Note**

SDS sections updated:

2

**Full text of H-Statements referred to under sections 2 and 3**
H319 - Causes serious eye irritation

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
OSHA
ECHA C&L
NZ CCID

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# BARACARB

**Revision Date:** 07-Aug-2018 **Revision Number:** 37

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** BARACARB

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM004943

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Bridging Agent

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Carcinogenicity | Category 1A - H350 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:** H350 - May cause cancer by inhalation

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required

**Response** P308 + P313 - IF exposed or concerned: Get medical advice/attention

**Storage** P405 - Store locked up

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Crystalline silica, quartz | 14808-60-7 |

**Other hazards which do not result in classification**
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 0.1 - 1% | Carc. 1A (H350)<br>STOT RE 1 (H372) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Not applicable

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Not applicable

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Evacuate all persons from the area.

**6.2. Environmental precautions**
None known.

**6.3. Methods and material for containment and cleaning up**
Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from acids. Store in a cool, dry location. Store locked up. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 60 months.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | TWA: 0.1 mg/m$^3$ | TWA: 0.025 mg/m$^3$ |

**Appropriate engineering controls**
**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an

| | |
|---|---|
| | industrial hygienist or other qualified professional based on the specific application of this product. |
| **Respiratory Protection** | Wear a NIOSH certified, European Standard EN 149 (FFP2/FFP3), AS/NZS 1715, or equivalent respirator when using this product. |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid Powder | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 8-9 |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 2.7 |
| **Water Solubility** | Insoluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide. Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | > 15000 mg/kg (human) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** None known.

**Ingestion** None known.

**Chronic Effects/Carcinogenicity** Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Exposure Levels**

No data available

**Interactive effects**

Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the skin |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Non-irritating to the eye No information available |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not regarded as mutagenic. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs) |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | EC50(72 h)=440 mg/L (Pseudokirchneriella subcapitata) | LL0(96 h)=10000 mg/L (Danio rerio) | No information available | LL50(24 h)>10000 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

The methods for determining biodegradability are not applicable to inorganic substances.

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

Does not bioaccumulate.

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**
This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**
Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**
Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**
**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 07-Aug-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
H350 - May cause cancer by inhalation
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# CFR-8L

**Revision Date:** 24-Apr-2018 **Revision Number:** 21

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CFR-8L

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM005627

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Cement Dispersant

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Wash with soap and water. Get medical attention if irritation persists. |
| **Ingestion** | Under normal conditions, first aid procedures are not required. |

**Symptoms caused by exposure**

No significant hazards expected.

**Medical Attention and Special Treatment**

| | |
|---|---|
| **Notes to Physician** | Treat symptomatically |

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Ensure adequate ventilation.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Not normally necessary.

**Hand Protection** Nitrile gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Liquid | **Color** | Brown-black |
| **Odor:** | Characteristic | **Odor Threshold:** | No information available |

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | 9 - 11.3 | |
| **Freezing Point / Range** | -7 °C | |
| **Melting Point / Range** | No data available | |
| **Boiling Point / Range** | 100 °C / 212 °F | |
| **Flash Point** | No data available | |
| **Evaporation rate** | No data available | |
| **Vapor Pressure** | < 18 mmHg | |
| **Vapor Density** | No data available | |
| **Specific Gravity** | 1.17 - 1.2 | |
| **Water Solubility** | Soluble in water | |
| **Solubility in other solvents** | No data available | |
| **Partition coefficient: n-octanol/water** | No data available | |
| **Autoignition Temperature** | No data available | |
| **Decomposition Temperature** | No data available | |
| **Viscosity** | No data available | |
| **Explosive Properties** | No information available | |
| **Oxidizing Properties** | No information available | |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers.

**10.6. Hazardous decomposition products**

Oxides of sulfur.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No data available | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** May cause mechanical irritation to eye.

**Skin Contact** None known.

**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**
No information available

**Endocrine Disruptor Information**
This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**
Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**
Follow all applicable national or local regulations.

**Environmental regulations**
Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | Product contains one or more components not listed on inventory. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | Product contains one or more components not listed on the inventory. |
| **Canadian Domestic Substances List (DSL)** | Product contains one or more components not listed on the inventory. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 24-Apr-2018

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SODIUM FLUORESCEIN POWDER

**Revision Date:** 23-Mar-2017 **Revision Number:** 4

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SODIUM FLUORESCEIN POWDER

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM007136

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Dye

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

| | |
|---|---|
| **Prevention** | None |
| **Response** | None |
| **Storage** | None |
| **Disposal** | None |

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Sodium fluorescein | 518-47-8 |

**Other hazards which do not result in classification**
None known

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Sodium fluorescein | 518-47-8 | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Wash with soap and water. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
All standard fire fighting media
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases.

**Special protective equipment and precautions for fire fighters**
**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust.

**6.2. Environmental precautions**
None known.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from acids. Store in a cool, dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Sodium fluorescein | 518-47-8 | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** Dust/mist respirator. (N95, P2/P3)
**Hand Protection** Normal work gloves.
**Skin Protection** Normal work coveralls.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Solid
**Color** Red-orange
**Odor:** Odorless
**Odor Threshold:** No information available

| Property | Values | Remarks/ - Method |
|---|---|---|
| **pH:** | No data available | |
| **Freezing Point / Range** | No data available | |
| **Melting Point / Range** | No data available | |
| **Boiling Point / Range** | 290 °C / 554 °F | |

| | |
|---|---|
| **Flash Point** | No data available |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | No data available |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 376.28 |
| **VOC Content (%)** | No data available |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
Strong acids.
**10.6. Hazardous decomposition products**
Hydrogen fluoride.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Numerical measures of toxicity**

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Sodium fluorescein | 518-47-8 | 6721 mg/kg (Rat)<br>2500 mg/kg (Rabbit)<br>4738 mg/kg (Mouse) | No data available | No data available |

**Immediate, delayed and chronic health effects from exposure**

| | |
|---|---|
| **Inhalation** | May cause mild respiratory irritation. |
| **Eye Contact** | May cause mild eye irritation. |
| **Skin Contact** | Prolonged or repeated contact may cause slight skin irritation. |
| **Ingestion** | May cause damage to bones and teeth. |

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Sodium fluorescein | 518-47-8 | Substance may cause slight skin irritation |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Sodium fluorescein | 518-47-8 | May cause mild eye irritation. |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Sodium fluorescein | 518-47-8 | No information available |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Sodium fluorescein | 518-47-8 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Sodium fluorescein | 518-47-8 | In vitro tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Sodium fluorescein | 518-47-8 | No data of sufficient quality are available. |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Sodium fluorescein | 518-47-8 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Sodium fluorescein | 518-47-8 | No data of sufficient quality are available. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Sodium fluorescein | 518-47-8 | No data of sufficient quality are available. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Sodium fluorescein | 518-47-8 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Sodium fluorescein | 518-47-8 | No information available | LC50 (96h) 997 mg/L (Psetta maxima)<br>LC50 (96h) 1372 mg/L (Oncorhynchus mykiss)<br>LC50 (96h) 2267 mg/L (Ictalurus punctatus)<br>LC50 (96h) 3433 mg/L (Lepomis macrochirus) | No information available | LC50 (48h) 337 mg/L (Daphnia pulex) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Sodium fluorescein | 518-47-8 | Readily biodegradable (100% @ 20d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Log Pow |
|---|---|---|

| | | |
|---|---|---|
| Sodium fluorescein | 518-47-8 | Log Kow = -0.67 (estimated) |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Sodium fluorescein | 518-47-8 | KOC = < 2 |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or |

| | |
|---|---|
| **Chemicals** | assessment certificate. |
| **EINECS (European Inventory of Existing Chemical Substances)** | This product, and all its components, complies with EINECS |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply |
| **Basel Convention - Hazardous Waste:** | Does not apply |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 23-Mar-2017

**Revision Note**
SDS sections updated: 2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# PAC™-LV

**Revision Date:** 17-Feb-2021 **Revision Number:** 6

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** PAC™-LV

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM007151

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Fluid Loss Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton/Baroid Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
Dust can form an explosive mixture in air
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
**Skin** Wash with soap and water. Get medical attention if irritation persists.
**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid creating and breathing dust. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

**6.2. Environmental precautions**

Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid creating or inhaling dust. Avoid dust accumulations. Slippery when wet. Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Store away from oxidizers. Store in a dry location. Product has a shelf life of 36 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White to off white |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6.5-9 (1%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | 221 °C / 430 °F |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.6 |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 400 °C / 752 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

Strong oxidizers.

**10.6. Hazardous decomposition products**

Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous substances in concentrations above | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** Non-irritating to the skin
**Ingestion** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**
Readily biodegradable

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Bury in a licensed landfill according to federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |

| | |
|---|---|
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 17-Feb-2021

**Revision Note**
SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**
None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**
bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SA-1015

**Revision Date:** 28-Jan-2020 **Revision Number:** 24

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SA-1015

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM007221

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Suspending Agent

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Non-Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

Not classified

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** Not Hazardous

**Hazard Statements:** Not Classified

**Precautionary Statements**

**Prevention** None
**Response** None
**Storage** None
**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA |

**Other hazards which do not result in classification**
Dust can form an explosive mixture in air
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | 60 - 100% | Not classified |

## 4. First aid measures

**Description of necessary first aid measures**
**Inhalation** Move person to fresh air.
**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
**Skin** Wash with soap and water. Get medical attention if irritation persists.
**Ingestion** Under normal conditions, first aid procedures are not required.

**Symptoms caused by exposure**
No significant hazards expected.

**Medical Attention and Special Treatment**
**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**
**Suitable Extinguishing Media**
Water fog, carbon dioxide, foam, dry chemical.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**
**Special exposure hazards in a fire**
Decomposition in fire may produce harmful gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Use appropriate protective equipment. Avoid creating and breathing dust. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Isolate spill and stop leak where safe. Scoop up and remove. Do NOT spread spilled product with water.

## 7. Handling and storage

**7.1. Precautions for safe handling**
**Handling Precautions**
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Avoid dust accumulations. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment. Slippery when wet.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage Information**
Store away from oxidizers. Keep container closed when not in use. Store in a dry location.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**
**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | Not applicable | Not applicable |

**Appropriate engineering controls**
**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**
**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.
**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional.
**Hand Protection** Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.
**Skin Protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.
**Eye Protection** Wear safety glasses or goggles to protect against exposure.
**Other Precautions** None known.
**Environmental Exposure Controls** Do not allow material to contaminate ground water system.

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Powder
**Color** White to tan
**Odor:** Slight
**Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 7 (1%) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | > 93 °C / > 200 °F (PMCC) |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | No data available |
| **Water Solubility** | Forms gel |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | 204 °C / 400 °F |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
Keep away from heat, sparks and flame.
**10.5. Incompatible materials**
Strong oxidizers.
**10.6. Hazardous decomposition products**
Carbon monoxide and carbon dioxide.

## 11. Toxicological Information

**Information on routes of exposure**
**Principle Route of Exposure** Eye and skin contact.

**Symptoms related to exposure**
**Most Important Symptoms/Effects**
No significant hazards expected.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Contains no hazardous | NA | No data available | No data available | No data available |

| | | | | |
|---|---|---|---|---|
| substances in concentrations above cut-off values according to the competent authority | | | | |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** Not irritating to skin in rabbits.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**
No data available

**Interactive effects**
None known.

**Data limitations**
No data available

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available | No information available | No information available | No information available |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.4. Mobility in soil

| Substances | CAS Number | Mobility |
|---|---|---|
| Contains no hazardous substances in concentrations above cut-off values according to the competent authority | NA | No information available |

### 12.6. Other adverse effects

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Follow all applicable community, national or regional regulations regarding waste management methods.
Substance should NOT be deposited into a sewage facility.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 28-Jan-2020

**Revision Note**

SDS sections updated:
2

**Full text of H-Statements referred to under sections 2 and 3**

None

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
NZ CCID

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

HALLIBURTON

# SAFETY DATA SHEET

# SILICALITE-LM

**Revision Date:** 22-Jan-2020 **Revision Number:** 4

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** SILICALITE-LM

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** HM008122

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Light Weight Cement Additive

**Uses advised against** No information available

**Supplier's name, address and phone number**

**Manufacturer/Supplier** Halliburton Australia Pty. Ltd.
15 Marriott Road, Jandakot, WA 6164
Australia
ACN Number: 009 000 775
Telephone Number: + 61 1 800 686 951
Fax Number: 61 (08) 9455 5300

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 3rd Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Not classified | |
| Respiratory Sensitization | Category 1 - H334 |
| Skin Sensitization | Category 1 - H317 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** DANGER

**Hazard Statements:**
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Precautionary Statements**

**Prevention**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P285 - In case of inadequate ventilation wear respiratory protection

**Response**
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

**Storage** None

**Disposal** P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Glutaraldehyde | 111-30-8 |

**Other hazards which do not result in classification**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 0.1 - 1% | Acute Tox. 3 (H301)<br>Acute Tox. 2 (H330)<br>Skin Corr. 1B (H314)<br>Eye Corr. 1 (H318)<br>Resp. Sens. 1 (H334)<br>Skin Sens. 1 (H317)<br>STOT SE 3 (H335)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 2 (H411) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

| | |
|---|---|
| **Eyes** | In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists. |
| **Skin** | Flush skin with large amounts of water. If irritation persists, get medical attention. |
| **Ingestion** | Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention. |

**Symptoms caused by exposure**

May cause allergic skin reaction. May cause allergic respiratory reaction.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**

All standard fire fighting media

**Extinguishing media which must not be used for safety reasons**

None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**

Not applicable

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**

None known. Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**

Avoid contact with eyes, skin, or clothing. Ensure adequate ventilation. Wash hands after use. Launder contaminated clothing before reuse. Use appropriate protective equipment.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Keep container closed when not in use. Product has a shelf life of 24 months.

**Other Guidelines**

No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable | Ceiling: 0.05 ppm |

**Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally necessary.

**Hand Protection** Impervious gloves Manufacturer's directions for use should be observed because of great diversity of types.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

**Environmental Exposure Controls** No information available

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

**Physical State:** Liquid **Color** Dark gray

**Odor:** Odorless **Odor Threshold:** No information available

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 6- 8 |
| **Freezing Point / Range** | 0 °C |
| **Melting Point / Range** | No data available |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | 100 °C / 212 °F |
| **Flash Point** | 100 °C / > 212 °F |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | 22.9 |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.37 |
| **Water Solubility** | Miscible with water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

**VOC Content (%)** No data available

**Liquid Density** 11.64 lbs/gal

## 10. Stability and Reactivity

**10.1. Reactivity**

Not expected to be reactive.

**10.2. Chemical stability**

Stable

**10.3. Possibility of hazardous reactions**

Will Not Occur

**10.4. Conditions to avoid**

None anticipated

**10.5. Incompatible materials**

None known.

**10.6. Hazardous decomposition products**

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye and skin contact.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

May cause allergic skin reaction. May cause allergic respiratory reaction.

**Toxicology data for the components**

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | 50 mg/kg (Guinea Pig) | 560 µL/kg (Rabbit) | 0.28-0.5 mg/L (Rat) 4h |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause allergic respiratory reaction.
**Eye Contact** May cause mechanical irritation to eye.
**Skin Contact** May cause an allergic skin reaction.
**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

None known.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe skin irritation with tissue destruction. (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Causes severe eye irritation which may damage tissue. (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Skin sensitizer in guinea pig. |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause sensitization by inhalation |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | In vivo tests did not show mutagenic effects. |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Did not show carcinogenic effects in animal experiments |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not a confirmed teratogen or embryotoxin. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|

| | | |
|---|---|---|
| Glutaraldehyde | 111-30-8 | No information available |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Glutaraldehyde | 111-30-8 | May cause disorder and damage to the Kidney |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Glutaraldehyde | 111-30-8 | EC50(72h): 0.61 mg/L (Desmodesmus subspicatus)<br>EC50(72h): 0.5 mg/L (Skeletonema costatum) | LC50(96h): 10 mg/L (Lepomis macrochirus)<br>NOEC(97d): 1.6 mg/L (Oncorhynchus mykiss)<br>LC50(96h): 3.5 mg/L (Oncorhynchus mykiss)<br>LC50(96h): 60 mg/L (Scophthalmus maximus) | EC50 (17h) 6.65 mg/L (Pseudomonas putida) | EC50(48h): 0.35 mg/L (Daphnia magna)<br>EC50(48h): 0.7 mg/L (Acartia tonsa)<br>NOEC(21d): 0.13 mg/L (Daphnia magna)<br>EC50(48h): 0.1 mg/L (Acartia tonsa) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Readily biodegradable (75% @ 28d) |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Glutaraldehyde | 111-30-8 | -0.36 |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Glutaraldehyde | 111-30-8 | Potential for mobility in soil is high (Koc between 50 and 150). Given its very low Henry'sconstant (3.3E-08 atm*m3/mole; 25 °C Measured), volatilization from natural bodies of water or moist soil is not expected to be an important fate process. |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IMDG/IMO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Special precautions during transport**

None

**HazChem Code**

None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AICS or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**

None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 22-Jan-2020

**Revision Note**

Change to composition
SDS sections updated:
2
3

8
11
15

**Full text of H-Statements referred to under sections 2 and 3**
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Additional information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**
www.ChemADVISOR.com/

**Disclaimer Statement**
This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

**SDS no.** D195
**Version** 5
**Revision date** 21-Sep-2020
**Supersedes Date:** 01-Dec-2015

# Safety Data Sheet
## HP Lite Extender D195

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** HP Lite Extender D195
**Product code** D195

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid generating or breathing dust. Take up mechanically and collect in suitable container for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders<br>Use protective gloves made of: Neoprene Rubber Nitrile<br>Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation, wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | None |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | Not applicable | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 0.57 - 0.63 g/cm³ |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust contact with the eyes can lead to mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
The product is insoluble and floats on water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 01-Dec-2015 |
| **Revision date** | 21-Sep-2020 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | Updated according to GHS/CLP. No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2179
**Version** 7
**Revision date** 22-Oct-2018
**Supersedes Date:** 05-Sep-2016

# Safety Data Sheet
## IDCAP* D

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** IDCAP* D
**Product code** PID2179

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale control agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Polymer

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Polymer | Listed | Proprietary | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid dust formation. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents Protect from moisture

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Polymer | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Polymer | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Polymer | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Polymer | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Polymer | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Granules Dust |
| **Odor** | Mild |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6.0 ± 1.00 | @ 1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.40 - 1.55 | @ 68°F / 20 °C |
| **Bulk density** | 750 kg/m³ | |

| | |
|---|---|
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | Soluble |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid contact with heat, sparks, open flame, and static discharge. Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. |
| **Eye contact** | Dust may cause mechanical irritation. |

**Skin contact** Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Polymer | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Polymer | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Product is not biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 05-Sep-2016 |
| **Revision date** | 22-Oct-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | 2, 6, 7, 8, 9, 10, 11, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

NEWPARK DRILLING FLUIDS

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** **IDCIDE-20**

**Synonyms** IDCIDE 20

### 1.2 Uses and uses advised against

**Uses** BIOCIDE ● DRILLING FLUID ADDITIVE ● WATER TREATMENT

### 1.3 Details of the supplier of the product

**Supplier name** **NEWPARK DRILLING FLUIDS (AUSTRALIA) LTD**

**Address** 11 Alacrity Place, Henderson, WA, 6166, AUSTRALIA

**Telephone** +61 8 9410 8200

**Fax** +61 8 9410 8299

**Website** www.newpark.com

### 1.4 Emergency telephone numbers

**Emergency** 1800 127 406 (Australia); +64 4 917 9888 (International)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

**Physical Hazards**

Not classified as a Physical Hazard

**Health Hazards**

Acute Toxicity: Oral: Category 4
Skin Corrosion/Irritation: Category 2
Skin Sensitisation: Category 1
Serious Eye Damage / Eye Irritation: Category 2A

**Environmental Hazards**

Not classified as an Environmental Hazard

### 2.2 GHS Label elements

**Signal word** **WARNING**

**Pictograms**

**Hazard statements**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |

**Prevention statements**

| | |
|---|---|
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

**Response statements**

| | |
|---|---|
| P301 + P312 | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P321 | Specific treatment is advised - see first aid instructions. |
| P330 | Rinse mouth. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P362 | Take off contaminated clothing and wash before re-use. |

**Storage statements**

None allocated.

**Disposal statements**

| | |
|---|---|
| P501 | Dispose of contents/container in accordance with relevant regulations. |

### 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|---|---|---|---|
| TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) | 55566-30-8 | 259-709-0 | 18 to 25% |
| WATER | 7732-18-5 | 231-791-2 | Remainder |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye** If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation** If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

**Skin** If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

**Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

**First aid facilities** Eye wash facilities should be available.

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### 4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

### 5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve carbon oxides and hydrocarbons when heated to decomposition. May evolve carbon oxides, sulphur oxides and phosphates when heated to decomposition.

### 5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

### 5.4 Hazchem code

None allocated.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

### 6.2 Environmental precautions

Prevent product from entering drains and waterways.

### 6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

### 6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Large storage areas should have appropriate ventilation systems.

### 7.3 Specific end uses

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

**Exposure standards**

No exposure standards have been entered for this product.

**Biological limits**

No biological limit values have been entered for this product.

### 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

**PPE**

| | |
|---|---|
| **Eye / Face** | Wear splash-proof goggles. |
| **Hands** | Wear PVC or rubber gloves. |
| **Body** | Wear coveralls. In a laboratory situation, wear a laboratory coat. |
| **Respiratory** | Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | COLOURLESS TO PALE YELLOW LIQUID |
| **Odour** | SLIGHT ODOUR |
| **Flammability** | NON FLAMMABLE |
| **Flash point** | NOT RELEVANT |
| **Boiling point** | > 100°C |
| **Melting point** | < 0°C |
| **Evaporation rate** | AS FOR WATER |
| **pH** | 3.0 to 3.5 |
| **Vapour density** | NOT AVAILABLE |
| **Specific gravity** | 1.08 |
| **Solubility (water)** | SOLUBLE |
| **Vapour pressure** | 18 mm Hg @ 20°C |
| **Upper explosion limit** | NOT RELEVANT |
| **Lower explosion limit** | NOT RELEVANT |
| **Partition coefficient** | NOT AVAILABLE |
| **Autoignition temperature** | NOT AVAILABLE |
| **Decomposition temperature** | NOT AVAILABLE |
| **Viscosity** | NOT AVAILABLE |
| **Explosive properties** | NOT AVAILABLE |
| **Oxidising properties** | NOT AVAILABLE |
| **Odour threshold** | NOT AVAILABLE |

### 9.2 Other information

| | |
|---|---|
| **% Volatiles** | > 60 % (Water) |

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), heat and ignition sources.

### 10.6 Hazardous decomposition products

May evolve carbon oxides and hydrocarbons when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity** Harmful if swallowed.

**Information available for the ingredients:**

| Ingredient | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) | 248 mg/kg (rat) | > 2000 mg/kg (rat) | 5.5 mg/L/4hrs (rat) |

**Additional ingredient toxicity values:**

TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE(2:1) (55566-30-8)

TDLo (oral) 650 mg/kg/13 weeks - intermittent (rat)

**Skin** Contact may result in irritation, redness, pain and rash.

| | |
|---|---|
| **Eye** | Contact may result in irritation, lacrimation, pain and redness. |
| **Sensitisation** | May cause an allergic skin reaction. This product is not classified as a respiratory sensitiser. |
| **Mutagenicity** | Not classified as a mutagen. |
| **Carcinogenicity** | Not classified as a carcinogen. |
| **Reproductive** | Not classified as a reproductive toxin. |
| **STOT - single exposure** | Over exposure may result in respiratory irritation, nausea, dizziness, drowsiness and headache. |
| **STOT - repeated exposure** | Not classified as causing organ damage from repeated exposure. |
| **Aspiration** | Not classified as causing aspiration. |

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

75% TETRAKIS(HYDROXYMETHYL)PHOSPHONIUM SULPHATE (55566-30-8):
LC50 (Rainbow Trout) = 119 mg/L/96 hr
LC50(Bluegill Sunfish) = 93 mg/L/ 96 hr
EC50 (Daphnia Magna) = 19 mg/L/48 hr
LC50 (Brown Shrimp) = 340 mg/L/96 hr
LC50 (Mysid Shrimp ) = 9.5 mg/L/96 hr
LC50 (Sheepshead Minnow) = 94 mg/L/96 hr
LC50 (Jevenile Plaice) = 86 mg/L/96 hr

Waste Water management
EC50 (Activated Sludge) = 24 mg/L/3 hr

### 12.2 Persistence and degradability

This product is readily biodegradable.

### 12.3 Bioaccumulative potential

No information provided.

### 12.4 Mobility in soil

No information provided.

### 12.5 Other adverse effects

No information provided.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** For small amounts, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. For large quantities, contact the manufacturer/supplier for additional information. Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

| | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|---|---|---|---|
| **14.1 UN Number** | None allocated. | None allocated. | None allocated. |
| **14.2 Proper Shipping Name** | None allocated. | None allocated. | None allocated. |
| **14.3 Transport hazard class** | None allocated. | None allocated. | None allocated. |
| **14.4 Packing Group** | None allocated. | None allocated. | None allocated. |

### 14.5 Environmental hazards

No information provided.

### 14.6 Special precautions for user

**Hazchem code** None allocated.

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications** Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

**Inventory listings** **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, or are exempt.

## 16. OTHER INFORMATION

**Additional information**

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:
It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

| | |
|---|---|
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS # | Chemical Abstract Service number - used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | EC No - European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonized System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Concentration, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| mg/m³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm | Parts Per Million |
| STEL | Short-Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| SWA | Safe Work Australia |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmtglobal.com

**[ End of SDS ]**

**SDS no.** 141788
**Version** 3
**Revision date** 11-Feb-2020
**Supersedes Date:** 02-Sep-2016

# Safety Data Sheet
## KCl BRINE w/GLYDRIL MC

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KCl BRINE w/GLYDRIL MC
**Product code** 141788

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 500-012-0 | 9004-77-7 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard

present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Mild |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 7 - 9 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -10 °C / 14 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |

| | | |
|---|---|---|
| **Vapor density** | No information available | |
| **Specific gravity** | 1.12 - 1.15 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids. Strong alkalies.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 2630 mg/kg (Rat) | 3540 mg/kg bw (Rabbit) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | LC50 >1800 mg/l, 96h Scophthalmus maximus OECD 203 | EC50: 2490 mg/l, 72h Selenastrum capricornutum OECD 201 | EC50 >3200 mg/l, 48h Daphnia magna OECD 202 |

### 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | OECD 301D 76% |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | log Kow 0.44@20°C |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Sep-2016 |
| **Revision date** | 11-Feb-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 3, 8, 11, 12, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 142053
**Version** 2
**Revision date** 22-Feb-2017
**Supersedes Date:** 03-Oct-2012

# Safety Data Sheet
## KCl/NaBr BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KCl/NaBr BRINE
**Product code** 142053
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Sodium bromide

Potassium Chloride

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium bromide | Not applicable | 7647-15-6 | 30-60 |
| Potassium Chloride | 231-211-8 | 7447-40-7 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Bromine, bromine oxides and hydrogen bromide, Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium bromide | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium bromide | Not determined | Not determined | 3 mg/m³ MAC |

| | | | |
|---|---|---|---|
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Neoprene Nitrile Butyl<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | ~ 7 | |
| **Melting / freezing point** | No information available | |

| | |
|---|---|
| **Boiling point/range** | > 100 °C / > 212 °F |
| **Flash point** | No information available |
| **Evaporation rate (BuAc =1)** | No information available |
| **Flammability (solid, gas)** | Not applicable |
| **Flammability Limit in Air** | |
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | No information available |
| **Bulk density** | No information available |
| **Relative density** | 1.30 - 1.44 s.g |
| **Water solubility** | Miscible with water. |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium bromide | = 3500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | No data available |
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium bromide | > 1000 mg/L LC50 Oncorhynchus mykiss 96 h 0.054 - 0.081 mg/L LC50 Oncorhynchus mykiss 96 h > 1000 mg/L LC50 Lepomis macrochirus 96 h 15614 - 17428 mg/L LC50 Pimephales promelas 96 h = 16000 mg/L LC50 Poecilia reticulata 96 h 16000 - 24000 mg/L LC50 Poecilia reticulata 96 h = 24000 mg/L LC50 Oryzias latipes 96 h 24000 - 96000 mg/L LC50 Oryzias latipes 96 h | 5800 - 24000 mg/L EC50 Scenedesmus pannonicus 96 h | 5700 - 10800 mg/L EC50 Daphnia magna 48 h 5800 - 48000 mg/L EC50 Daphnia magna 48 h |
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

## 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium bromide
Schedule 4
Potassium Chloride
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Oct-2012 |
| **Revision date** | 22-Feb-2017 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID16782
**Version** 4
**Revision date** 20-Jun-2019
**Supersedes Date:** 08-Dec-2015

# Safety Data Sheet
## KCL/POLYMER SYSTEM

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KCL/POLYMER SYSTEM
**Product code** PID16782

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Barite

Potassium Chloride

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Barite | 236-664-5 | 13462-86-7 | 60-100 |
| Potassium Chloride | 231-211-8 | 7447-40-7 | 10-30 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 1-5 |

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

The product contains other ingredients which do not contribute to the overall classification.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth

to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Barite | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC Butyl
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Mild |
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 7 - 11 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.1 - 2.0 | @ 20°C. |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**

Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Barite | No information available | No information available | No information available |
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Barite | Inorganic compound |
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Barite | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**

The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Barite | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Barite | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium Chloride
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 08-Dec-2015

| | |
|---|---|
| **Revision date** | 20-Jun-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID857
**Version** 6
**Revision date** 09-Nov-2018
**Supersedes Date:** 14-Nov-2017

# Safety Data Sheet
## KLA-GARD*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLA-GARD*
**Product code** PID857

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale control agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Ammonia or amines may be released when this component is heated or exposed to high pH.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Oxidizing agents Acids Bases |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Contains no substances with occupational exposure limit values No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Repeated or prolonged contact Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient |

| | |
|---|---|
| | ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Local authorities should be advised if significant spillages cannot be contained See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Amine |
| **Color** | Clear - Blue |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6.5 - 8.5 | (1% solution) |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 125 °C / 257 °F | |
| **Flash point** | > 99 °C / > 210 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 sg | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Ammonia or amines may be released when this component is heated or exposed to high pH.

### 10.5 Incompatible materials

Oxidizing agents. Acids. Bases.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Readily biodegradable. (ECHA data) (PRODUCT).

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely. (ECHA data) (PRODUCT).

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 14-Nov-2017

**Revision date** 09-Nov-2018

| | |
|---|---|
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | 2, 6, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID17728
**Version** 4
**Revision date** 20-Jul-2018
**Supersedes Date:** 02-Apr-2016

# Safety Data Sheet
## KLA-HIB*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLA-HIB*
**Product code** PID17728

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P310 - Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P363 - Wash contaminated clothing before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine*

Hydrochloric acid

Hexane-1,6-diamine

Cyclohex-1,2-ylenediamine

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | 907-605-7 | RM1003118 | 10-30 |
| Hydrochloric acid | 231-595-7 | 7647-01-0 | 10-30 |
| Hexane-1,6-diamine | 204-679-6 | 124-09-4 | 10-30 |
| Cyclohex-1,2-ylenediamine | 211-776-7 | 694-83-7 | 5-10 |

**Comments**
Hydrochloric acid added for pH adjustment.

H314 does not apply as studies have been performed confirming this substance is an Irritant and not Corrosive to Skin.

The product contains other ingredients which do not contribute to the overall classification.

*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention at once.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek immediate medical attention/advice.

**Eye Contact** — Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek medical attention at once.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapors or spray mist. Use personal protective equipment. Do not get on skin or clothing. Wash thoroughly after handling. See also section 8.

### 6.2 Environmental precautions

Do not allow material to contaminate ground water system.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Isocyanates Aldehydes Ketones Anhydrides. Phenols Nitrates Acids Halogenated compounds

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| Hydrochloric acid | Not determined | Not determined | Not determined |
| Hexane-1,6-diamine | 0.5 ppm TWA<br>2.3 mg/m³ TWA | Not determined | Not determined |
| Cyclohex-1,2-ylenediamine | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| Hydrochloric acid | 5 ppm Ceiling<br>7 mg/m³ Ceiling | 2 ppm Ceiling | Not determined |
| Hexane-1,6-diamine | Not determined | 0.5 ppm TWA | Not determined |
| Cyclohex-1,2-ylenediamine | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Reaction mass of | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| 7-azatridecane-1,13-diamine and hexamethylenediamine* | | | |
| Hydrochloric acid | 5 mg/m³ MAC | 7.5 mg/m³ STEL<br>5.0 ppm STEL | 5 ppm Ceiling<br>7.5 mg/m³ Ceiling |
| Hexane-1,6-diamine | 0.1 mg/m³ MAC | Not determined | Not determined |
| Cyclohex-1,2-ylenediamine | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| Hydrochloric acid | 5 ppm Ceiling<br>7.5 mg/m³ Ceiling | Not determined | Acute dangerous substance<br>5 mg/m³ MAC |
| Hexane-1,6-diamine | 0.5 ppm TWA<br>2.3 mg/m³ TWA | Not determined | 0.1 mg/m³ MAC<br>Allergenic substance |
| Cyclohex-1,2-ylenediamine | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| Hydrochloric acid | Not determined | 5 mg/m³ TWA<br>7.5 mg/m³ STEL | 10 ppm STEL<br>15 mg/m³ STEL<br>5 ppm TWA<br>8 mg/m³ TWA |
| Hexane-1,6-diamine | Not determined | Not determined | Not determined |
| Cyclohex-1,2-ylenediamine | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Neoprene Rubber PVC
Break through time >480 minutes
Glove thickness 0.5 mm Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Pungent |
| **Color** | Dark brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9-11 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | ~ 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.0 - 1.10 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents. Isocyanates. Aldehydes. Ketones. Anhydrides. Phenols. Nitrates. Acids. Halogenated compounds.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** Skin corrision: Not corrosive. - By analogy to product with similar composition.

**Inhalation** May cause respiratory irritation.

**Eye contact** Causes serious eye damage.

**Skin contact** Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.

**Ingestion** Harmful if swallowed.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No data available | No data available | No data available |
| Hydrochloric acid | 238 - 277 mg/kg ( Rat ) | > 5010 mg/kg ( Rabbit ) | = 1.68 mg/L ( Rat ) 1 h |
| Hexane-1,6-diamine | = 750 mg/kg ( Rat ) | = 1110 mg/kg ( Rabbit ) | No data available |
| Cyclohex-1,2-ylenediamine | = 4556 mg/kg ( Rat ) | No data available | > 3.23 mg/L ( Rat ) 4 h |

**Sensitization** May cause sensitization by skin contact.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Ingestion. Eye contact. Skin contact. Inhalation.

| | |
|---|---|
| **Routes of entry** | Ingestion. Eye contact. Skin contact. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Category 3 |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Target organ effects** | Respiratory system. Lungs. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No information available | No information available | No information available |
| Hydrochloric acid | = 282 mg/L LC50 Gambusia affinis 96 h | No information available | No information available |
| Hexane-1,6-diamine | = 62 mg/L LC50 Leuciscus idus 96 h = 1825 mg/L LC50 Pimephales promelas 96 h > 56 mg/L LC50 Lepomis macrochirus 96 h | = 14.8 mg/L EC50 Pseudokirchneriella subcapitata 96 h = 15 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 23.4 mg/L EC50 Daphnia magna 48 h |
| Cyclohex-1,2-ylenediamine | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Product is biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Readily biodegradable |
| Hydrochloric acid | Readily biodegradable |
| Hexane-1,6-diamine | Readily biodegradable |
| Cyclohex-1,2-ylenediamine | Readily biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

| Chemical Name | Bioaccumulation |
|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No information available |
| Hydrochloric acid | Does not bioaccumulate |
| Hexane-1,6-diamine | Does not bioaccumulate |
| Cyclohex-1,2-ylenediamine | No information available |

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Easily soluble |
| Hydrochloric acid | Soluble in water |
| Hexane-1,6-diamine | Easily soluble |
| Cyclohex-1,2-ylenediamine | Soluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No information available |
| Hydrochloric acid | Not expected to adsorb on soil |
| Hexane-1,6-diamine | Not expected to adsorb on soil |
| Cyclohex-1,2-ylenediamine | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

This product was tested in accordance with the IATA Dangerous Goods Classification Procedures, Test Method for Corrosive Substances. The test results has determined that this product is not Corrosive.

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

Hydrochloric acid
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | Complies Does not comply |
| **Philippines (PICCS)** | Does not comply |

| | |
|---|---|
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

CAS Number 68411-90-5 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 02-Apr-2016 |
| **Revision date** | 20-Jul-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 1, 2, 7, 8, 11, 12, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** SYS00015
**Version** 2
**Revision date** 27-Mar-2019
**Supersedes Date:** 04-Aug-2016

# Safety Data Sheet
## KLA-SHIELD* PREMIX

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLA-SHIELD* PREMIX
**Product code** SYS00015
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Pre-mix for Drilling Fluid. Water based.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H318 - Causes serious eye damage

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | - | 9046-10-0 | < 3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the

drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits**

Contains no substances with occupational exposure limit values
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | No information available |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | 2885 mg/kg ( Rat )<br>OECD 401 | 2979 mg/kg ( Rabbit )<br>OECD 402 | > 0.74 mg/l ( Rat )<br>OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

| | |
|---|---|
| **Routes of Exposure** | Skin contact. Eye contact. |
| **Routes of entry** | None known. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | LC50 >700 mg/l 96h | EC50 >700 mg/l 72h | EC50 >1001 mg/l 48h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 04-Aug-2016 |
| **Revision date** | 27-Mar-2019 |

| | |
|---|---|
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID16312
**Version** 5
**Revision date** 21-Jan-2019
**Supersedes Date:** 18-Dec-2015

# Safety Data Sheet
## KLA-SHIELD* SYSTEM

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLA-SHIELD* SYSTEM
**Product code** PID16312

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium Chloride

Crystalline silica (impurity)

Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine*

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium Chloride | 231-598-3 | 7647-14-5 | 10-30 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | 907-605-7 | RM1003118 | <1 |

**Comments**
*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits**
Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Butyl
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Amine |
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 10-11 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 17 - 23.8 mbar | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 - 2.0 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**

The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

**Inhalation** Vapors may irritate throat and respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |
| Reaction mass of 7-azatridecane-1,13-diamine | No data available | No data available | No data available |

| | | | |
|---|---|---|---|
| and hexamethylenediamine* | | | |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium Chloride | = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |
| Reaction mass of 7-azatridecane-1,13-diamine and | No information available | No information available | No information available |

| | | | |
|---|---|---|---|
| hexamethylenediamine* | | | |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Readily biodegradable |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No information available |

## 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | Easily soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |
| Reaction mass of 7-azatridecane-1,13-diamine and hexamethylenediamine* | No information available |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances**

**[NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

CAS Number 68411-90-5 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 18-Dec-2015 |
| **Revision date** | 21-Jan-2019 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12074
**Version** 9
**Revision date** 21-Feb-2019
**Supersedes Date:** 08-Feb-2019

# Safety Data Sheet
## KLA-STOP*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLA-STOP*
**Product code** PID12074

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1C |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse

**Contains**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | - | 9046-10-0 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention at once.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Avoid contact with eyes. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids |
| **Storage class** | Corrosive storage. |

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene Rubber
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Ammoniacal |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 9.2 - 10.2 | @ 5% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 93 °C / > 200 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.03 - 1.075 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 80 - 120 cP | @ 24 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Not known.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

### 10.5 Incompatible materials

Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system. Inhaled corrosive substances can lead to a toxic edema of the lungs.

**Eye contact** Causes burns. May cause irreversible damage to eyes.

**Skin contact** Causes severe skin burns.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | 2885 mg/kg ( Rat )<br>OECD 401 | 2979 mg/kg ( Rabbit )<br>OECD 402 | > 0.74 mg/l ( Rat )<br>OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Inhalation. |
| **Routes of entry** | Skin contact. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | LC50 >700 mg/l 96h | EC50 >700 mg/l 72h | EC50 >1001 mg/l 48h |

### 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN2735
**UN No. (IMDG/ANTAQ)** UN2735
**UN No. (ICAO/ANAC)** UN2735

### 14.2. UN proper shipping name

AMINES, LIQUID, CORROSIVE, N.O.S. (contains Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups)

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** 8

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | III |
| **IMDG/ANTAQ Packing group** | III |
| **ICAO/ANAC Packing group** | III |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002491 |
| **Group number** | 8.3A, 8.2C |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 08-Feb-2019 |
| **Revision date** | 21-Feb-2019 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | 1, 2, 3, 5, 7, 8, 10, 11, 12, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID859
**Version** 5
**Revision date** 14-Nov-2019
**Supersedes Date:** 01-Aug-2016

# Safety Data Sheet
## KLEEN UP*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** KLEEN UP*
**Product code** PID859

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Detergent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Alcohols, C11-14-iso-, C13-rich, ethoxylated

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | polymer | 78330-21-9 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Seek medical attention at once.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store at room temperature Do not freeze Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** No information available
**Odor** Slight
**Color** Off-white
**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | 7.0 - 8.5 | ASTM E70 (as supplied) |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | ~ 100 °C / ~ 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | ~ 1.02 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | </= 0°C |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Store at room temperature. Do not freeze.

**10.5 Incompatible materials**

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**LD50 Oral** > 2000 mg/kg (rat) (based on components) (MIXTURE)

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Alcohols, C11-14-iso-, C13-rich, ethoxylated | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002503 |
| **Group number** | 8.3A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances**

**[NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 01-Aug-2016 |
| **Revision date** | 14-Nov-2019 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | 2, 3, 7, 8, 11, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on**

**measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D188S
**Version** 1
**Revision date** 20-Mar-2019
**Supersedes Date:** None

# Safety Data Sheet
## Light Weight Extender D188S

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Light Weight Extender D188S
**Product code** D188S

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Silicon Dioxide

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Silicon Dioxide | 231-545-4 | 7631-86-9 | <=3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
None known

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Silicon Dioxide | Not determined | 2mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Silicon Dioxide | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Silicon Dioxide | 1 mg/m³ MAC<br>2 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Silicon Dioxide | Not determined | Not determined | 3 mg/m³ STEL<br>6 mg/m³ STEL<br>1 mg/m³ TWA<br>2 mg/m³ TWA<br>Fibrogenic substance in the form of condensation aerosol containing it >60% 1121, 1122<br>Fibrogenic substance also vitreous, in the form of disintegration aerosol 1123 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Silicon Dioxide | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.38 - 0.42 | |
| **Bulk density** | No information available | |
| **Relative density** | 0.97-1.01 kg/cm3 | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |

| | |
|---|---|
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Silicon Dioxide | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 2.2 mg/L ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation. Ingestion.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Silicon Dioxide | = 5000 mg/L LC50 Brachydanio rerio 96 h | = 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 7600 mg/L EC50 Ceriodaphnia dubia 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

**12.4 Mobility**

**Mobility**
The product is insoluble and floats on water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |

**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel

| | |
|---|---|
| **Revision date** | 20-Mar-2019 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D077
**Version** 4
**Revision date** 08-Feb-2021
**Supersedes Date:** 07-Mar-2019

# Safety Data Sheet
## Liquid Accelerator D77

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Liquid Accelerator D77
**Product code** D077

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

–

**Contains**
Calcium chloride

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium chloride | 233-140-8 | 10043-52-4 | 30 - 60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Chlorine, chlorine oxides, hydrogen chloride.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Strong reducing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium chloride | Not determined | Not determined | 2 mg/m³ MAC (aerosol) |

| Chemical Name | Thailand | Vietnam | Turkey |
|---|---|---|---|
| Calcium chloride | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile rubber
Break through time >480 minutes
Glove thickness 0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type B/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Odorless |
| **Color** | Colorless |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6.5 - 7.5 | |
| **pH @ dilution** | No information available | |

| | | |
|---|---|---|
| **Melting / freezing point** | -14 °C / 7 °F | |
| **Boiling point/range** | > 100 °C / >212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | 9 mmHg | @ 20 °C |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 1.01 - 1.41 | @ 20 °C |
| **Bulk density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | Not applicable | |
| **Oxidizing properties** | None known. | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
None known.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Oxidizing agents. Strong reducing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium chloride | = 1000 mg/kg ( Rat ) | > 5000 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Neurological effects** None known.

**Target organ effects** None known.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**

This product is not considered toxic to algae.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium chloride | = 10650 mg/L LC50 Lepomis macrochirus 96 h | No information available | 2,400 mg/L EC50 (Daphnia magna) = 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium chloride | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium chloride | Inorganic compound |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium chloride | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium chloride | After release, disperses through ground water |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Proper Shipping Name : Calcium Chloride Solution (less than 35%) Ship Type:- 3. Pollution Category:- Z.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Classified

**HSNO approval no.** Calcium Chloride - HSR003389
Calcium chloride, >25% in a non hazardous diluent - HSR006565

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code) with amendments.MARPOL 73/78; Marine Environmental Protection Committee (MEPC) Circulars.**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 07-Mar-2019 |
| **Revision date** | 08-Feb-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D162
**Version** 4
**Revision date** 24-May-2021
**Supersedes Date:** 25-Aug-2015

# Safety Data Sheet
## Liquid Anti-Settling Agent D162

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Liquid Anti-Settling Agent D162
**Product code** D162

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Flammable Liquids | Category 4 |

### 2.2 Label elements

**Signal word**

WARNING

**Hazard Statements**
H227 - Combustible liquid

**Precautionary statements**
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

_

**Contains**
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics*

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Distillates, petroleum, hydrotreated light | 265-149-8 | 64742-47-8 | 60-100 |

**Comments**
The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
P378 - Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
combustible liquid. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixture with air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with heat, sparks, open flame, and static discharge. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water. Take precautionary measures against static discharges. Ground and bond containers when transferring material.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m$^3$ and ST. EXP = 10mg/m$^3$.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Butyl rubber Nitrile<br>Break through time >480 minutes<br>Glove thickness 0.38 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Solution |
| **Odor** | Slight Petroleum solvent |
| **Color** | Amber |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 208 °C / 406 °F | |

| | | |
|---|---|---|
| **Flash point** | 77 °C / 171 °F | ASTM D 93 |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 0.87 | |
| **Bulk density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | > 20.5 mm2/s | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | No information available | |
| **Oxidizing properties** | No information available | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Combustible liquid.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | >5000 mg/kg (Rat) | No data available | >5000 mg/m³ (Rat, 8h)<br>>5000 mg/kg (Rabbit) |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available | 1000 mg/l (Oncorhynchus mykiss, 96h | 1000 mg/l (Daphnia magna), 48h |

### 12.2 Persistence and degradability

Product is biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Readily biodegradable |

### 12.3 Bioaccumulative potential

No product level data available.

| Chemical Name | Bioaccumulation |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Slightly soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Do not burn, or use a cutting torch on, the empty drum. Empty containers may contain flammable or explosive vapors. Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Additives, Process Chemicals and Raw Materials (Combustible) Group Standard 2020

**HSNO approval no.** HSR002490

**Group number** 3.1D

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |

| | |
|---|---|
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 25-Aug-2015 |
| **Revision date** | 24-May-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | This SDS has been made in a new database and therefore a new layout. There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 2 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D081
**Version** 4
**Revision date** 12-May-2020
**Supersedes Date:** 27-Mar-2018

# Safety Data Sheet
## Liquid Retarder D81

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Liquid Retarder D81
**Product code** D081

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Store away from incompatibles, Strong acids Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing |

before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Of burnt sugar / Slight |
| **Color** | Dark brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 3.5 - 5.1 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.24 - 1.26 | @ 27 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 400 °C / 752 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 350 mPa.s | @ 20 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from direct sunlight.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Inhalation. |
| **Routes of entry** | No route of entry noted. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 27-Mar-2018 |
| **Revision date** | 12-May-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 9, 12, No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D194
**Version** 3
**Revision date** 12-Feb-2019
**Supersedes Date:** 03-Jun-2015

# Safety Data Sheet
## Liquid Trifunctional Additive D194

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Liquid Trifunctional Additive D194
**Product code** D194

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Mild |
| **Color** | Brown |
| **Odor threshold** | No information available |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -2 °C / 28.4 °F | |
| **Boiling point/range** | 104 °C / 219.2 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 14.2 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.30 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | <600 cst | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Inhalation. Ingestion. Eye contact. |
| **Routes of entry** | Ingestion. Inhalation. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 03-Jun-2015 |
| **Revision date** | 12-Feb-2019 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no**

**responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D124
**Version** 4
**Revision date** 24-Jul-2019
**Supersedes Date:** 05-Jun-2015

# Safety Data Sheet
## LITEFIL* D124 Extender

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** LITEFIL* D124 Extender
**Product code** D124

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Ashes (residues), cenospheres

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ashes (residues), cenospheres | Listed | Proprietary | 60-30 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
None known

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Extremely slippery when spilled.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Hydrofluoric acid (HF)

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ashes (residues), cenospheres | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ashes (residues), cenospheres | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ashes (residues), cenospheres | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ashes (residues), cenospheres | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ashes (residues), cenospheres | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**
**Eye protection** Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields
**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile Rubber Frequent change is advisable

| | |
|---|---|
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Ceramic Microspheres |
| **Odor** | Earthy |
| **Color** | Gray White Off-white Brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 1200-1400 °C / 2192-2552 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 384 kg/m³ | |
| **Relative density** | 0.60 - 0.85 g/cc | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation.

### 10.5 Incompatible materials

Hydrofluoric acid (HF).

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ashes (residues), cenospheres | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Inhalation. Ingestion. Eye contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ashes (residues), cenospheres | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**

The product is insoluble and floats on water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not applicable

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ashes (residues), cenospheres
Schedule 4
Schedule 6
Schedule 5

| | |
|---|---|
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |

| | |
|---|---|
| **Supersedes Date:** | 05-Jun-2015 |
| **Revision date** | 24-Jul-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D097
**Version** 5
**Revision date** 15-Jul-2021
**Supersedes Date:** 30-Sep-2015

# Safety Data Sheet
## Losseal* W / O D097

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Losseal* W / O D097
**Product code** D097

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Mica

Glass fibers

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Mica | 601-648-2 | 12001-26-2 | 30-60 |
| Glass fibers | 262-373-8 | 60676-86-0 | 10-30 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep

powder dry.

**Methods for cleaning up**
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Mica | 3 mg/m³ TWA | 2.5mg/m³TWAinspirable | Not determined |
| Glass fibers | 0.1 mg/m³ TWA | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Mica | Not determined | 3 mg/m³ TWA | Not determined |
| Glass fibers | Not determined | 0.1 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Mica | 2 mg/m³ MAC | Not determined | 3 mg/m³ TWA |
| Glass fibers | 1 mg/m³ MAC | Not determined | 0.2 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Mica | 3 mg/m³ TWA | Not determined | 6 mg/m³ STEL<br>0.5 mg/m³ TWA<br>Fibrogenic substance 1179 |
| Glass fibers | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance in the form of disintegration aerosol 1177 |

| | | | |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Mica | 3 mg/m³ TWA | Not determined | Not determined |
| Glass fibers | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

**Respiratory protection** No protective equipment is needed under normal use conditions In case of inadequate ventilation wear respiratory protection Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

**Physical state** Solid
**Appearance** Flakes
**Odor** Odorless
**Color** White - Amber

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |

| | |
|---|---|
| **pH @ dilution** | No information available |
| **Melting / freezing point** | No information available |
| **Boiling point/range** | No information available |
| **Flash point** | No information available |
| **Evaporation rate (BuAc =1)** | No information available |
| **Flammability** | Not applicable |
| **Explosion limits:** | |
| **Upper explosion limit** | No information available |
| **Lower explosion limit** | No information available |
| **Vapor pressure** | No information available |
| **Relative Vapor Density** | No information available |
| **Specific gravity** | 2.7 - 2.9 |
| **Bulk density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **Partition Coefficient (n-octanol/water)** | No information available |
| **Density and/or Relative Density** | No information available |
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** May cause skin irritation and/or dermatitis. Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Mica | No data available | No data available | No data available |
| Glass fibers | No data available | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Mica | No information available | No information available | No information available |
| Glass fibers | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Does not comply |
| **Canada (DSL)** | This product contains chemical(s) which is/are not listed on DSL but is/are listed on the NDSL. |

| | |
|---|---|
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 30-Sep-2015 |
| **Revision date** | 15-Jul-2021 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D186
**Version** 8
**Revision date** 23-Aug-2019
**Supersedes Date:** 10-Feb-2016

# Safety Data Sheet
## Low Temperature Cement Set Enhancer D186

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Low Temperature Cement Set Enhancer D186
**Product code** D186

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H318 - Causes serious eye damage

**Precautionary statements**
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P330 - Rinse mouth
P391 - Collect spillage

**Contains**
Calcium nitrate

2,2' -oxydiethanol

Calcium Bromide

2,2'-Methyliminodiethanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium nitrate | 233-332-1 | 10124-37-5 | 10-30 |
| 2,2' -oxydiethanol | 203-872-2 | 111-46-6 | 1-5 |
| Calcium Bromide | 232-164-6 | 7789-41-5 | 1-5 |
| 2,2'-Methyliminodiethanol | 203-312-7 | 105-59-9 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention. Never give anything by mouth to an unconscious person.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Thermal decomposition can lead to release of irritating gases and vapors.

**Hazardous combustion products**
Fire or high temperatures create: Ammonia, Nitrogen oxides (NOx), Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear protective gloves/clothing and eye/face protection. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. See also section 8.

### 6.2 Environmental precautions

Prevent further leakage or spillage. The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Acids Bases Strong reducing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium nitrate | Not determined | Not determined | Not determined |
| 2,2' -oxydiethanol | Not determined | 23ppmTWA<br>100mg/m³TWA | Not determined |
| Calcium Bromide | Not determined | Not determined | Not determined |
| 2,2'-Methyliminodiethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium nitrate | Not determined | Not determined | Not determined |
| 2,2' -oxydiethanol | Not determined | Not determined | Not determined |
| Calcium Bromide | Not determined | Not determined | Not determined |
| 2,2'-Methyliminodiethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium nitrate | Not determined | Not determined | Not determined |
| 2,2' -oxydiethanol | 10 mg/m³ MAC | Not determined | 23 ppm TWA<br>101 mg/m³ TWA |
| Calcium Bromide | Not determined | Not determined | Not determined |
| 2,2'-Methyliminodiethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium nitrate | Not determined | Not determined | Not determined |
| 2,2' -oxydiethanol | Not determined | Not determined | 10 mg/m³ MAC |
| Calcium Bromide | Not determined | Not determined | Not determined |
| 2,2'-Methyliminodiethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium nitrate | Not determined | Not determined | Not determined |
| 2,2' -oxydiethanol | Not determined | Not determined | Not determined |
| Calcium Bromide | Not determined | Not determined | Not determined |
| 2,2'-Methyliminodiethanol | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile PVC
Break through time >480 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor/acid gas protection (E, yellow) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before breaks and immediately after handling the product

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | None |
| **Color** | Light green |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 8 - 10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -21 °C / -7 °F | |
| **Boiling point/range** | ~ 108 °C / 226 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | ~2 kPa | @ 25 °C |
| **Vapor density** | 1 (air = 1) | |
| **Specific gravity** | 1.4 | |
| **Bulk density** | No information available | |
| **Relative density** | 1.4 | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | 538 °C / 1000 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 2 mPa s | @ 15.5 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
None under normal processing.

### 10.4 Conditions to avoid

Do not allow liquid to evaporate. Dry material is a strong oxidizer.

### 10.5 Incompatible materials

Acids. Bases. Strong reducing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Irritating to skin. Substance may cause slight skin irritation.

**Ingestion** Harmful if swallowed.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium nitrate | No data available | No data available | No data available |
| 2,2' -oxydiethanol | = 12565 mg/kg ( Rat ) | = 11890 mg/kg ( Rabbit ) | > 4600 mg/m³ ( Rat ) 4 h |
| Calcium Bromide | = 4100 mg/kg ( Rat ) | No data available | No data available |
| 2,2'-Methyliminodiethanol | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Inhalation. Ingestion. |
| **Routes of entry** | Skin contact. Eye contact. Inhalation. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium nitrate | No information available | No information available | No information available |
| 2,2' -oxydiethanol | = 75200 mg/L LC50 Pimephales promelas 96 h | No information available | = 84000 mg/L EC50 Daphnia magna 48 h |
| Calcium Bromide | No information available | No information available | No information available |
| 2,2'-Methyliminodiethanol | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2,2' -oxydiethanol
Schedule 6
Schedule 5
Calcium Bromide
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 10-Feb-2016 |
| **Revision date** | 23-Aug-2019 |

| | |
|---|---|
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D230
**Version** 5
**Revision date** 23-Apr-2021
**Supersedes Date:** 05-Apr-2016

# Safety Data Sheet
## Low Temperature Dispersant D230

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Low Temperature Dispersant D230
**Product code** D230

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Heating of containers may cause pressure rise, with risk of bursting.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Protect from freezing |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Use protective gloves made of: Butyl rubber Nitrile rubber<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Characteristic |
| **Color** | Colorless |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 3.5 - 5.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | ~0 °C / ~32 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | 1.006 - 1.046 g/ml | |
| **Explosive properties** | Not applicable | |
| **Oxidizing properties** | Not applicable | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**

The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from direct sunlight. Protect from freezing.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

The organic portion of this material is not biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Dispersible.

**Mobility in soil**
No information available.

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required

**Group number** Not required

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG) ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 05-Apr-2016 |
| **Revision date** | 23-Apr-2021 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D154
**Version** 4
**Revision date** 22-Dec-2020
**Supersedes Date:** 08-Jun-2016

# Safety Data Sheet
## Low-Temperature Extender D154

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Low-Temperature Extender D154
**Product code** D154

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Fumed silica

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Fumed silica | 273-761-1 | 69012-64-2 | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <0.1 |

**3.2 Mixtures**

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash skin thoroughly with soap and water. Call a physician if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Vacuum up. Avoid generating dust. Put into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid handling causing generation of dust.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep at temperatures above 0°C React with hydrofluoric acid (HF) forming toxic gas (SiF4)

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Fumed silica | 10 mg/m³ TWA<br>3 mg/m³ TWA<br>2 mg/m³ TWA | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Fumed silica | Not determined | 2 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Fumed silica | Not determined | Not determined | 2 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Fumed silica | 2 mg/m³ TWA | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Fumed silica | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing and gloves Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Gray - Off-white |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | N/D | |
| **Melting / freezing point** | >1200 °C/ 2192 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Does not flash | |

| | | |
|---|---|---|
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.1 - 2.3 | |
| **Bulk density** | 17 - 28.1 lb/ft$^3$ | @ 20°C. |
| **Relative density** | No information available | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |
| **Particle Size (Micron)** | > 45-Microns = 2.5 wt% max |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Keep at temperatures above 0°C.

**10.5 Incompatible materials**

Hydrofluoric acid (HF).

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Fumed silica | >5000 mg/kg bw | >5000 mg/kg bw | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Fumed silica | LC50>100 mg/l | LC50>323 mg/l (72h) | LC50>1003 mg/l |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Fumed silica | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Fumed silica | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Fumed silica | Slightly soluble |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 08-Jun-2016 |
| **Revision date** | 22-Dec-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on**

**measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D145A
**Version** 3
**Revision date** 17-Mar-2021
**Supersedes Date:** 03-Mar-2016

# Safety Data Sheet
## Low-Temperature Liquid Dispersant D145A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Low-Temperature Liquid Dispersant D145A
**Product code** D145A

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Carcinogenicity | Category 1B |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H350 - May cause cancer

**Precautionary statements**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

–

**Contains**
Formaldehyde (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Formaldehyde (impurity) | 200-001-8 | 50-00-0 | < 0.2 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.
Note D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generallyplaced on the market in a stabilised form. It is in this form that they are listed in Part 3.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

| | |
|---|---|
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Seek medical attention if irritation occurs. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Do not get on skin or clothing. Wash thoroughly after handling. Use personal protective

equipment. Do not breathe vapors or spray mist. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Protect from freezing Avoid contact with: Strong acids Strong bases Strong oxidizing agents Strong reducing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Formaldehyde (impurity) | 0.3 ppm STEL<br>0.4 mg/m³ STEL | 2ppmSTEL<br>2.5mg/m³STEL<br>1ppmTWA<br>1.2mg/m³TWA | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling<br>Suspected Human Carcinogen<br>0.3 ppm TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Formaldehyde (impurity) | 2 ppm STEL | 0.3 ppm STEL | 0.2 ppm Ceiling |

| | | | |
|---|---|---|---|
| | 3 mg/m³ STEL<br>1.0 ppm TWA<br>1.5 mg/m³ TWA | 0.3 mg/m³ STEL | 0.24 mg/m³ Ceiling<br>Group 2 airway sensitizer<br>Group 1 skin sensitizer<br>0.1 ppm ACL<br>0.1 ppm OEL<br>0.12 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Formaldehyde (impurity) | 0.5 mg/m³ MAC | 0.016 ppm TWA<br>0.1 ppm STEL | 0.5 ppm TWA<br>0.33 ppm TWA<br>sensitiser<br>Confirmed carcinogen<br>1 ppm Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Formaldehyde (impurity) | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling | Not determined | 0.5 mg/m³ MAC (vapor) |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Formaldehyde (impurity) | 2 ppm STEL<br>0.75 ppm TWA | 0.5 mg/m³ TWA<br>1 mg/m³ STEL | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Butyl rubber Nitrile
Break through time >480 minutes
Glove thickness 0.7 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Characteristic |
| **Color** | No information available |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 9.0 - 11.4 | |
| **pH @ dilution** | No information available | Not applicable |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | ~ 100 °C / 212 °F | |
| **Flash point** | Non-flammable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 30 - 60 mm2/s | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.24 - 1.26 g/ml @ 20 °C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid excessive heat for prolonged periods of time. Protect from freezing.

### 10.5 Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Formaldehyde (impurity) | = 100 mg/kg ( Rat ) | = 270 mg/kg ( Rabbit ) | = 0.578 mg/L ( Rat ) 4 h |

**Sensitization** EUH208 - Contains ( Formaldehyde ). May produce an allergic reaction.

**Mutagenic effects** Contains an known or suspected mutagen.

**Carcinogenicity** Contains a known or suspected carcinogen. Formaldehyde is listed by IARC in Group 1 as carcinogenic to humans.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation. Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Formaldehyde (impurity) | 23.2 - 29.7 mg/L LC50 Pimephales promelas 96 h 100 - 136 mg/L LC50 Oncorhynchus mykiss 96 h 0.032 - 0.226 mL/L LC50 Oncorhynchus mykiss 96 h = 41 mg/L LC50 Brachydanio rerio 96 h = 1510 µg/L LC50 Lepomis macrochirus 96 h 22.6 - 25.7 mg/L LC50 Pimephales promelas 96 h | No information available | 11.3 - 18 mg/L EC50 Daphnia magna 48 h = 2 mg/L LC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Formaldehyde (impurity) | Rapidly biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Formaldehyde (impurity) | Does not bioaccumulate log Pow =0.35 |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Formaldehyde (impurity) | Miscible in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Formaldehyde (impurity) | Henry's Law Constant 0.034 (in Pa m³/mol) @ 25 °C |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Formaldehyde (impurity)
Schedule 6

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002512 |
| **Group number** | 6.7A |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 03-Mar-2016 |
| **Revision date** | 17-Mar-2021 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D155
**Version** 4
**Revision date** 13-Nov-2019
**Supersedes Date:** 12-Feb-2016

# Safety Data Sheet
## Low-Temperature Liquid Extender D155

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Low-Temperature Liquid Extender D155
**Product code** D155

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Fumed silica

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Fumed silica | 273-761-1 | 69012-64-2 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place React with hydrofluoric acid (HF) forming toxic gas (SiF4) Store above 0°C Protect from freezing

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Fumed silica | 10 mg/m³ TWA<br>3 mg/m³ TWA<br>2 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Fumed silica | Not determined | 2 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Fumed silica | Not determined | Not determined | 2 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Fumed silica | 2 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Fumed silica | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Rubber<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of inadequate ventilation wear respiratory protection Respirator with combination filter for vapor/particulate Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Slurry |
| **Odor** | Odorless |
| **Color** | Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 5-7 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | Similar to water. | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.4 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |

| | | |
|---|---|---|
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 70 mPa s | @ 20 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | 50 |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Protect from freezing. Keep at temperatures above 0°C.

**10.5 Incompatible materials**

Hydrofluoric acid (HF).

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Product information** | Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply. |
| **Inhalation** | Breathing dried dust or spray mist may irritate respiratory tract. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Fumed silica | >5000 mg/kg bw | >5000 mg/kg bw | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Fumed silica | LC50>100 mg/l | LC50>323 mg/l (72h) | LC50>1003 mg/l |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 12-Feb-2016 |
| **Revision date** | 13-Nov-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12248
**Version** 4
**Revision date** 02-Mar-2020
**Supersedes Date:** 06-Oct-2016

# Safety Data Sheet
## LUBE 776*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** LUBE 776*
**Product code** PID12248

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lubricant

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Castor oil, sulfated, sodium salt

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Castor oil, sulfated, sodium salt | 269-123-7 | 68187-76-8 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Seek immediate medical attention/advice.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store at ambient conditions Avoid frost. Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Castor oil, sulfated, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Castor oil, sulfated, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Castor oil, sulfated, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |

| | | | |
|---|---|---|---|
| Castor oil, sulfated, sodium salt | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Castor oil, sulfated, sodium salt | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: PVC Neoprene Nitrile
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Slight |
| **Color** | Light yellow |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5 - 7 | @ 50g/l |
| **Melting / freezing point** | No information available | |

| | | |
|---|---|---|
| **Boiling point/range** | No information available | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.95 - 1.00 | @ 20°C. |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Store at ambient conditions. Avoid frost.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**LD50 Oral** > 2000 mg/kg (rat) Calculated (MIXTURE)

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Castor oil, sulfated, sodium salt | > 2000 mg/kg ( Rat ) | > 2000 mg/kg (Rat)24 h - similar substance | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Castor oil, sulfated, sodium salt | > 100 mg/l (LC50) similar substance - 96 h | > 10 mg/l (LC50) similar substance - 72 h | ~ 100 mg/l (LC50) Suppliers data - 48 h |

### 12.2 Persistence and degradability

Readily biodegradable.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Dispersible in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by**

**Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 06-Oct-2016 |
| **Revision date** | 02-Mar-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** 143090
**Version** 1
**Revision date** 08-Jan-2019
**Supersedes Date:** None

# Safety Data Sheet
## LUBE EXE*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** LUBE EXE*
**Product code** 143090
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lubricant

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

-

**Contains**
2-[2-(2-butoxyethoxy)ethoxy]ethanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | 205-592-6 | 143-22-6 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Do not eat, drink or smoke when using this product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |

| | | | |
|---|---|---|---|
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Neoprene PVC Rubber
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** No information available
**Odor** Slight
**Color** No information available
**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |

| | | |
|---|---|---|
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.95 - 1.05 | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | = 5300 mg/kg (Rat)<br>Literature data | > 2000 mg/kg (Rabbit) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact.

**Routes of entry** Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-[2-(2-butoxyethoxy)ethoxy]ethanol | 2200 - 4600 mg/L LC50 Leuciscus idus 96h<br>= 2400 mg/L LC50 Pimephales promelas 96h | > 500 mg/L EC50 Desmodesmus subspicatus 72h | > 500 mg/L EC50 Daphnia magna 48h |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Does not comply |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Revision date** | 08-Jan-2019 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID926
**Version** 5
**Revision date** 09-Jul-2018
**Supersedes Date:** 28-Oct-2015

# Safety Data Sheet
## LUBE-167*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** LUBE-167*
**Product code** PID926

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lubricant

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** , No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
May cause slight irritation

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |

| | |
|---|---|
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Mild |
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 8.8 - 9.2 | 1% solution |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 116 °C / 240 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | >10 | (Air = 1.0) |
| **Specific gravity** | 0.96 - 1.01 | 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **LD50 Oral** | > 2000 mg/kg (rat) Calculated (PRODUCT) |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is not biodegradable.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 28-Oct-2015 |
| **Revision date** | 09-Jul-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

multi-chem®
A HALLIBURTON SERVICE

# SAFETY DATA SHEET

# CALCIUM CHLORIDE

**Revision Date:** 22-Jun-2021 **Revision Number:** 2

## 1. Product Identifier & Identity for the Chemical

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**1.1. Product Identifier**

**Product Name** CALCIUM CHLORIDE

**Other means of Identification**

**Synonyms** None

**Hazardous Material Number:** MC600201

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Intermediate

**Uses advised against** Consumer use

**Supplier's name, address and phone number**

**Manufacturer/Supplier**

Multi-Chem
A Halliburton Energy Services, Inc. Company
1 Ward Road
East Rockingham
WA 6168
Australia

Telephone Number: 61 (08) 9419 5300
Fax Number: 61 (08) 9439 1055
Emergency Telephone Number: + 61 1 800 686 951

**E-mail Address** fdunexchem@halliburton.com

**Emergency phone number**

+ 61 1 800 686 951
Global Incident Response Access Code: 334305
Contract Number: 14012

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

## 2. Hazard Identification

**Statement of Hazardous Nature** Hazardous according to the criteria of the 7th Revised Edition of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), Non-Dangerous Goods according to the criteria of ADG.

**Classification of the hazardous chemical**

| | |
|---|---|
| Serious Eye Damage/Irritation | Category 2 - H319 |

**Label elements, including precautionary statements**

**Hazard Pictograms**

**Signal Word** WARNING

**Hazard Statements:** H319 - Causes serious eye irritation

**Precautionary Statements**

**Prevention** P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear eye protection/face protection

**Response** P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Storage** None

**Disposal** None

**Contains**

| **Substances** | **CAS Number** |
|---|---|
| Calcium chloride | 10043-52-4 |

**Other hazards which do not result in classification**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).
This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

*For the full text of the H-phrases mentioned in this Section, see Section 16*

## 3. Composition/information on Ingredients

| Substances | CAS Number | PERCENT (w/w) | GHS Classification - Australia |
|---|---|---|---|
| Calcium chloride | 10043-52-4 | 60 - 100% | Eye Irrit. 2A (H319) |

## 4. First aid measures

**Description of necessary first aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Eyes** Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Ingestion** Rinse mouth with water many times. Get medical attention, if symptoms occur

**Symptoms caused by exposure**

Causes eye irritation.

**Medical Attention and Special Treatment**

**Notes to Physician** Treat symptomatically

## 5. Fire Fighting Measures

**Suitable extinguishing equipment**

**Suitable Extinguishing Media**
None - does not burn.
**Extinguishing media which must not be used for safety reasons**
None known.

**Specific hazards arising from the chemical**

**Special exposure hazards in a fire**
None anticipated

**Special protective equipment and precautions for fire fighters**

**Special protective equipment for firefighters**
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation. Use appropriate protective equipment. Avoid contact with skin, eyes and clothing.

**6.2. Environmental precautions**
Prevent from entering sewers, waterways, or low areas.

**6.3. Methods and material for containment and cleaning up**
Scoop up and remove. Pick up and transfer to properly labeled containers.

## 7. Handling and storage

**7.1. Precautions for safe handling**

**Handling Precautions**
Ensure adequate ventilation. Use appropriate protective equipment. Avoid contact with eyes, skin, or clothing.
**Hygiene Measures**
Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**
Store in a well ventilated area.
**Other Guidelines**
No information available

## 8. Exposure Controls/Personal Protection

**Control parameters - exposure standards, biological monitoring**

**Exposure Limits**

| Substances | CAS Number | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|
| Calcium chloride | 10043-52-4 | Not applicable | Not applicable |

**Appropriate engineering controls**

**Engineering Controls** Ensure adequate ventilation, especially in confined areas

**Personal protective equipment (PPE)**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN

| | |
|---|---|
| | 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Chemical goggles; also wear a face shield if splashing hazard exists. |
| **Other Precautions** | None known. |
| **Environmental Exposure Controls** | No information available |

## 9. Physical and Chemical Properties

**9.1. Information on basic physical and chemical properties**

| | | | |
|---|---|---|---|
| **Physical State:** | Solid | **Color** | White |
| **Odor:** | Odorless | **Odor Threshold:** | No information available |

| Property<br>Remarks/ - Method | Values |
|---|---|
| **pH:** | 10 (1 % solution) |
| **Freezing Point / Range** | No data available |
| **Melting Point / Range** | 782 °C / 1439.6 °F |
| **Pour Point / Range** | No data available |
| **Boiling Point / Range** | No data available |
| **Flash Point** | Not applicable. |
| **Evaporation rate** | No data available |
| **Vapor Pressure** | No data available |
| **Vapor Density** | No data available |
| **Specific Gravity** | 1.8375 - 1.8625 (20 °C/68 °F) |
| **Water Solubility** | Soluble in water |
| **Solubility in other solvents** | No data available |
| **Partition coefficient: n-octanol/water** | No data available |
| **Autoignition Temperature** | No data available |
| **Decomposition Temperature** | No data available |
| **Viscosity** | No data available |
| **Explosive Properties** | No information available |
| **Oxidizing Properties** | No information available |

**9.2. Other information**

| | |
|---|---|
| **Molecular Weight** | 110.986 |
| **VOC Content (%)** | No data available |
| **Liquid Density** | 15.31 - 15.53 lbs/gal |
| **Bulk Density** | 1837 - 1863 kg/m$^3$ |

## 10. Stability and Reactivity

**10.1. Reactivity**
Not expected to be reactive.
**10.2. Chemical stability**
Stable
**10.3. Possibility of hazardous reactions**
Will Not Occur
**10.4. Conditions to avoid**
None anticipated
**10.5. Incompatible materials**
None known.
**10.6. Hazardous decomposition products**
None known.

## 11. Toxicological Information

**Information on routes of exposure**

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Symptoms related to exposure**

**Most Important Symptoms/Effects**

Causes eye irritation.

## Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|---|
| Calcium chloride | 10043-52-4 | > 1000 mg/kg (Rat)<br>2301 mg/kg (Rat)<br>> 2000 mg/kg (Rat)<br>2240 mg/kg (Rat) | 5000 mg/kg (Rabbit) | No data available |

**Immediate, delayed and chronic health effects from exposure**

**Inhalation** May cause mild respiratory irritation.

**Eye Contact** Causes serious eye irritation.

**Skin Contact** May cause mild skin irritation.

**Ingestion** May cause abdominal pain, vomiting, nausea, and diarrhea.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**Exposure Levels**

No data available

**Interactive effects**

Skin disorders.

**Data limitations**

No data available

| Substances | CAS Number | Skin corrosion/irritation |
|---|---|---|
| Calcium chloride | 10043-52-4 | Causes mild skin irritation (Rabbit) |

| Substances | CAS Number | Serious eye damage/irritation |
|---|---|---|
| Calcium chloride | 10043-52-4 | Causes moderate eye irritation (Rabbit) |

| Substances | CAS Number | Skin Sensitization |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available |

| Substances | CAS Number | Respiratory Sensitization |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available |

| Substances | CAS Number | Mutagenic Effects |
|---|---|---|
| Calcium chloride | 10043-52-4 | Did not show mutagenic effects in animal experiments |

| Substances | CAS Number | Carcinogenic Effects |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available |

| Substances | CAS Number | Reproductive toxicity |
|---|---|---|
| Calcium chloride | 10043-52-4 | Animal testing did not show any effects on fertility. |

| Substances | CAS Number | STOT - single exposure |
|---|---|---|
| Calcium chloride | 10043-52-4 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available. |

| Substances | CAS Number | Aspiration hazard |
|---|---|---|
| Calcium chloride | 10043-52-4 | Not applicable |

## 12. Ecological Information

**Ecotoxicity**

**Product Ecotoxicity Data**

Product is not classified as hazardous to the environment.

**Substance Ecotoxicity Data**

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|---|---|---|---|---|---|
| Calcium chloride | 10043-52-4 | ErC50 (72h) 2900 mg/L (Pseudokirchnerella subcapitata)<br>ErC50 (72h) 4000 mg/L (Pseudokirchnerella subcapitata) | LC50 (96h) 4630 mg/L (Pimephales promelas)<br>LC50 (48h) >6560 mg/L (Pimephales promelas)<br>LC50 (24h) >6660 mg/L (Pimephales promelas) | No information available | EC50 (48h) 2400 mg/L (Daphnia magna)<br>EC50 (21d) 610 mg/L (reproduction) (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances | CAS Number | Persistence and Degradability |
|---|---|---|
| Calcium chloride | 10043-52-4 | The methods for determining biodegradability are not applicable to inorganic substances. |

**12.3. Bioaccumulative potential**

| Substances | CAS Number | Bioaccumulation |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available |

**12.4. Mobility in soil**

| Substances | CAS Number | Mobility |
|---|---|---|
| Calcium chloride | 10043-52-4 | No information available |

**12.6. Other adverse effects**

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

## 13. Disposal Considerations

**Safe handling and disposal methods**

Disposal should be made in accordance with federal, state, and local regulations.

**Disposal of any contaminated packaging**

Follow all applicable national or local regulations.

**Environmental regulations**

Not applicable

## 14. Transport Information

**Transportation Information**

**Australia ADG**

**UN Number** Not restricted
**UN proper shipping name:** Not restricted
**Transport Hazard Class(es):** Not applicable
**Packing Group:** Not applicable
**Environmental Hazards:** Not applicable

**IMDG/IMO**

**UN Number** Not restricted

| | |
|---|---|
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**IATA/ICAO**

| | |
|---|---|
| **UN Number** | Not restricted |
| **UN proper shipping name:** | Not restricted |
| **Transport Hazard Class(es):** | Not applicable |
| **Packing Group:** | Not applicable |
| **Environmental Hazards:** | Not applicable |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable

**Special precautions during transport**
None

**HazChem Code**
None Allocated

## 15. Regulatory Information

**Safety, health and environmental regulations specific for the product**

**International Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | All components are listed on the AIIC or are subject to a relevant exemption, permit, or assessment certificate. |
| **New Zealand Inventory of Chemicals** | All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate. |
| **US TSCA Inventory** | All components listed on inventory or are exempt. |
| **Canadian Domestic Substances List (DSL)** | All components listed on inventory or are exempt. |

**Poisons Schedule number**
None Allocated

**International Agreements**

| | |
|---|---|
| **Montreal Protocol - Ozone Depleting Substances:** | Does not apply. |
| **Stockholm Convention - Persistent Organic Pollutants:** | Does not apply |
| **Rotterdam Convention - Prior Informed Consent:** | Does not apply. |
| **Basel Convention - Hazardous Waste:** | Does not apply. |

## 16. Other information

**Date of preparation or review**

**Revision Date:** 22-Jun-2021

**Revision Note**
SDS sections updated:
11

**Full text of H-Statements referred to under sections 2 and 3**
H319 - Causes serious eye irritation

**Additional information:** For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**Key abreviations or acronyms used**

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
PBT – Persistent Bioaccumulative and Toxic
ppm – parts per million
STEL – Short Term Exposure Limit
TWA – Time-Weighted Average
vPvB – very Persistent and very Bioaccumulative
h - hour
$mg/m^3$ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

**Key literature references and sources for data**

www.ChemADVISOR.com/
OSHA
ECHA C&L

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

**End of Safety Data Sheet**

**SDS no.** PID938
**Version** 12
**Revision date** 17-Jan-2020
**Supersedes Date:** 05-Mar-2019

# Safety Data Sheet
## M-I BAR* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** M-I BAR* (All Grades)
**Product code** PID938

**Synonyms** M-I BAR*, M-I BAR* FINE, M-I BAR* ULTRA FINE

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Weighting agent.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Barite

Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Barite | 236-664-5 | 13462-86-7 | 60 - 100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 5 - <10 |

### 3.2 Mixtures

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid wet and humid conditions.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |

| | | | |
|---|---|---|---|
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Barite | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile PVC Frequent change is advisable

**Respiratory protection** In case of inadequate ventilation wear respiratory protection Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Solid
**Appearance** Powder Dust
**Odor** Odorless
**Color** Tan - Gray
**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |

| | |
|---|---|
| **Melting / freezing point** | No information available |
| **Boiling point/range** | No information available |
| **Flash point** | Not applicable |
| **Evaporation rate (BuAc =1)** | No information available |
| **Flammability (solid, gas)** | Not applicable |
| **Flammability Limit in Air** | |
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | 4.2 g/cm³ (minimum) |
| **Bulk density** | 1.714-2.162 kg/m³ / 107-135 lb/ft3 |
| **Relative density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Avoid wet and humid conditions.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

Respirable quartz <0.3% . Report number: N0600517.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

Listed on PLONOR list of OSPAR

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Barite | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Barite | Inorganic compound |
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Barite | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Barite | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Barite | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

CAS Number 7727-43-7 can be used to identify the substance mentioned in Section 3 for the International Inventories.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 05-Mar-2019 |
| **Revision date** | 17-Jan-2020 |
| **Version** | 12 |
| **This SDS has been revised in the following section(s)** | 1, 2, 3, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID982
**Version** 4
**Revision date** 17-Jan-2018
**Supersedes date** 08-Aug-2014

# Safety Data Sheet
## M-I GEL* SUPREME

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** M-I GEL* SUPREME
**Product code** PID982

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% | Component information |
|---|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 1-5 | STOT Rep. 2 (H373) |

**3.2 Mixtures**

Not applicable

**Comments**
Naturally occuring mineral.
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if

present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Phillippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Light tan - Gray Green |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9-10 | |
| **pH @ dilution** | | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |

| | | |
|---|---|---|
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.3 - 2.6 | 20 °C |
| **Bulk density** | 48-52 lb/ft³ / 769-833 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues / unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand hazard classification** | Not classified. |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations**

**2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes date** | 08-Aug-2014 |
| **Revision date** | 17-Jan-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
European Waste Catalog
European Agreement on International Transport of Dangerous Goods by Road (ADR)

**Full text of H-Statements referred to under sections 2 and 3**

This product is not classified as hazardous therefore no (H) hazard statements assigned.

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID971
**Version** 4
**Revision date** 17-Feb-2020
**Supersedes Date:** 01-Feb-2016

# Safety Data Sheet
## M-I GEL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** M-I GEL*
**Product code** PID971

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | < 10 |

**3.2 Mixtures**

Not applicable

**Comments**
Naturally occuring mineral.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Provide eyewash station. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Cream - Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9-10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.3 - 2.6 | @ 20 °C |

| | |
|---|---|
| **Bulk density** | 48 – 52 lb/ft³ (769 – 833 kg/m³) |
| **Relative density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Product information** | This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. |

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 01-Feb-2016 |
| **Revision date** | 17-Feb-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 142408
**Version** 8
**Revision date** 08-Mar-2019
**Supersedes Date:** 28-Sep-2017

# Safety Data Sheet
## M-I PAC* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** M-I PAC* (All Grades)
**Product code** 142408

**Synonyms** M-I PAC* ELV, M-I PAC* R, M-I PAC* SR, M-I PAC* SUL, M-I PAC* UL
Molecular weight 982.4 g/mol

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Fluid loss reducer. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Polyanionic cellulose

### 2.3 Other hazards

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Polyanionic cellulose | Listed | Proprietary | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Polyanionic cellulose | 10 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Polyanionic cellulose | Not determined | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Polyanionic cellulose | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will

vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6.5 - 9.5 | @ 2% (20g/L) |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 - 1.6 | @ 20 °C |
| **Bulk density** | 400 - 800 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |

| | |
|---|---|
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | ~ 250°C / 482°F |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 982.4 g/mol |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture. Keep away from direct sunlight.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Polyanionic cellulose | = 27000 mg/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Polyanionic cellulose | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

| | |
|---|---|
| **Supersedes Date:** | 28-Sep-2017 |
| **Revision date** | 08-Mar-2019 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D163
**Version** 7
**Revision date** 27-Jul-2018
**Supersedes Date:** 09-Jan-2015

# Safety Data Sheet
## Microfine Cement D163

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Microfine Cement D163
**Product code** D163

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1B |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Portland Cement Clinker

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Portland Cement Clinker | 266-043-4 | 65997-15-1 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
The product itself does not burn, Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Prevent dust cloud. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Pick up and transfer to properly labeled containers. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors/dust. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Do not eat, drink or smoke when using this product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Store away from incompatibles, Powdered aluminum Oxidizing agents Hydrofluoric acid (HF) Strong bases Strong acids |
| **Storage class** | Chemical storage. |

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Portland Cement Clinker | 10 mg/m³ TWA | 10 mg/m³ TWA | 4 mg/m³ OEL<br>1 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Portland Cement Clinker | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Portland Cement Clinker | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Portland Cement Clinker | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Butyl Neoprene Nitrile Rubber Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | None |
| **Color** | Gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 11.0 -13.5 | @ 10 g/l |
| **Melting / freezing point** | > 1250 °C / 2282 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | Not applicable | |
| **Specific gravity** | 2.75 - 3.20 g/cm$^3$ | |
| **Bulk density** | 1040 kg/m$^3$ | |
| **Relative density** | No information available | |
| **Water solubility** | Slightly soluble in water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture.

### 10.5 Incompatible materials

Aluminium powder. Oxidizing agents. Strong acids. Strong bases. Hydrofluoric acid (HF).

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** May cause respiratory irritation. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. Contact with moist skin may cause skin burns. May cause an allergic skin reaction.

**Ingestion** Ingestion may cause irritation to mucous membranes.

**Unknown acute toxicity** Not applicable.

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Portland Cement Clinker | No data available | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Category 3

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Portland Cement Clinker | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Portland Cement Clinker | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Portland Cement Clinker | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Slightly soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Portland Cement Clinker

Schedule 4
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 09-Jan-2015 |
| **Revision date** | 27-Jul-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | SDS fully updated in the new database. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |

| | |
|---|---|
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D255
**Version** 3
**Revision date** 11-Jul-2019
**Supersedes Date:** 04-Jan-2018

# Safety Data Sheet
## Mid-Range FLAC D255

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Mid-Range FLAC D255
**Product code** D255

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

**Contains**
2-methylpropan-2-ol

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-methylpropan-2-ol | 200-889-7 | 75-65-0 | <5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid generating or breathing dust. Take precautionary measures against static discharges. Take up mechanically and collect in suitable container for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid excessive heat for prolonged periods of time. Keep away from direct sunlight. Incompatible with oxidizing agents Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-methylpropan-2-ol | 100 ppm TWA<br>303 mg/m³ TWA | 150ppmSTEL<br>455mg/m³STEL<br>100ppmTWA<br>303mg/m³TWA | 100 ppm TWA<br>303 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-methylpropan-2-ol | Not determined | 100 ppm TWA<br>303 mg/m³ TWA | 50 ppm OEL<br>150 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-methylpropan-2-ol | 10 mg/m³ MAC | Not determined | 150 ppm STEL<br>455 mg/m³ STEL<br>100 ppm TWA<br>303 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2-methylpropan-2-ol | 100 ppm TWA<br>303 mg/m³ TWA | 100 ppm TWA<br>300 mg/m³ TWA | 10 mg/m³ MAC |

| Chemical Name | Thailand | Vietnam | Turkey |
|---|---|---|---|
| 2-methylpropan-2-ol | 100 ppm TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Rubber gloves Butyl Neoprene Nitrile Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules |
| **Odor** | None |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 4 - 9 | @ 5 g/l |
| **Melting / freezing point** | > 250 °C / 482 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |

| | |
|---|---|
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | Not applicable |
| **Vapor density** | Not applicable |
| **Specific gravity** | 1.15 - 1.35 |
| **Bulk density** | ~ 0.20 - 0.40 |
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | >150°C / >302° F |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Keep away from direct sunlight. Avoid excessive heat for prolonged periods of time. Keep away from open flames, hot surfaces and sources of ignition.

**10.5 Incompatible materials**

Incompatible with oxidizing agents. Strong acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-methylpropan-2-ol | = 2200 mg/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 10000 ppm ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-methylpropan-2-ol | 6130 - 6700 mg/L LC50 Pimephales promelas 96 h | > 1000 mg/L EC50 Desmodesmus subspicatus 72 h | 4607 - 6577 mg/L EC50 Daphnia magna 48 h = 933 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
<0

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required

**Group number** Not required

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

**USA (TSCA)** Does not comply

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 04-Jan-2018 |
| **Revision date** | 11-Jul-2019 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 15. Regulatory Information No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D256
**Version** 2
**Revision date** 11-Jul-2019
**Supersedes Date:** 11-Apr-2016

# Safety Data Sheet
## Mid-Range liquid FLAC D256

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Mid-Range liquid FLAC D256
**Product code** D256

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia, Sulfur oxides, Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. If spilled, take caution, as material can cause surfaces to become very slippery. Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Avoid excessive heat for prolonged periods of time. Protect from freezing Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl Neoprene Nitrile Rubber<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the |

work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Slight |
| **Color** | Light yellow |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 3 - 7 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < 5 °C / 41 °F | |
| **Boiling point/range** | > 100 °C / 212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Similar to water. | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2.3 kPa @ 20°C | |
| **Vapor density** | Similar to water. | |
| **Specific gravity** | 1.0 - 1.3 | |
| **Bulk density** | No information available | |
| **Relative density** | 1.0-1.3 | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 100°C / 212°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from freezing. Keep away from direct sunlight. Avoid excessive heat for prolonged periods of time.

### 10.5 Incompatible materials

Incompatible with oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing >0.1%. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | Contains a known or suspected carcinogen. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards at concentrations >0.1%. |

| | |
|---|---|
| **Routes of Exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. Skin contact. Eye contact. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Product has a low potential to bioconcentrate.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 11-Apr-2016 |
| **Revision date** | 11-Jul-2019 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D801
**Version** 1
**Revision date** 12-Mar-2018
**Supersedes Date:** 09-Oct-2014

# Safety Data Sheet
## Mid-Temp Retarder-L D801

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Mid-Temp Retarder-L D801
**Product code** D801

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs. |
| **Skin contact** | Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. Seek medical attention if irritation occurs. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Rubber Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Opaque |
| **Odor** | Characteristic |
| **Color** | Dark brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 9 - 10 | @ 10% sol. |
| **Melting / freezing point** | - 2 °C / 28 °F | |
| **Boiling point/range** | ~ 101 °C / 214 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Similar to water | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.2 g/cm$^3$ | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 242 °C / 468 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 500 mPa s | @ 20 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |

| | |
|---|---|
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | None known. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known. Check for additional information in sect. 7.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
Not regulated

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand hazard classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 09-Oct-2014 |
| **Revision date** | 12-Mar-2018 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID11307
**Version** 9
**Revision date** 08-Jul-2018
**Supersedes Date:** 19-Feb-2016

# Safety Data Sheet
## M-I-X* II (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** M-I-X* II (All Grades)
**Product code** PID11307

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

–

**Contains**
Cellulose Fibre

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard
Product dust may be irritating to eyes, skin and respiratory system

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Cellulose | Listed | Proprietary | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <2 |

**3.2 Mixtures**

Not applicable

**Comments**
Naturally occuring mineral.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly after handling. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal,

state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Cellulose Fibre | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Cellulose Fibre | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Cellulose Fibre | 2 mg/m³ MAC | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA |

| | | | Confirmed carcinogen |
|---|---|---|---|
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Cellulose Fibre | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Cellulose Fibre | Not determined | 10 mg/m³ TWA<br>5 mg/m³ TWA<br>20 mg/m³ STEL | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation, wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** — Solid
**Appearance** — Powder Dust
**Odor** — Slight
**Color** — Tan
**Odor threshold** — Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.4 - 1.65 | 20 °C |
| **Bulk density** | 352-513 kg/m³ / 22-32 lb/ft³ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** No information available

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Cellulose Fibre | > 5 g/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Cellulose Fibre | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

This product is expected to be readily biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 19-Feb-2016 |
| **Revision date** | 08-Jul-2018 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1081
**Version** 10
**Revision date** 19-Mar-2018
**Supersedes Date:** 17-Dec-2014

# Safety Data Sheet
# MONOETHYLENE GLYCOL (MEG)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** MONOETHYLENE GLYCOL (MEG)
**Product code** PID1081

**Synonyms** MONOETHYLENE GLYCOL 100%, MEG 100%
Molecular weight 62.06 g/mol

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Commercial chemical

**Uses advised against** None known.

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

–

**Contains**
Ethylene Glycol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ethylene Glycol | 203-473-3 | 107-21-1 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Extinguishing media - small fires, Dry powder,
, Extinguishing media - large fires, Water spray, fog or regular foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Ethylene Glycol | Not determined | 40ppmSTELvapour<br>104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 39.4 ppm Ceiling<br>100 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethylene Glycol | 5 mg/m³ MAC | 125 mg/m³ TWA<br>50.0 ppm TWA<br>100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA<br>52 mg/m³ TWA |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Nitrile Neoprene Butyl rubber
Break through time >480 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more

information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Mild |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6 - 7.5 | @ 10% |
| **Melting / freezing point** | < -12 °C / 10.4 °F | |
| **Boiling point/range** | 196 - 199 °C / 384.8 - 390.2 °F | |
| **Flash point** | 111 °C / 231.8 °F | Closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | 28 % | |
| **Lower flammability limit** | 3.2 % | |
| **Vapor pressure** | 0.007 kPa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 410 °C / 770 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 21 mPas | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | -1.36 | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 62.06 g/mol |
| **VOC content(%)** | None |
| **Density** | 1.11 ± 0.03 g/ml @ 25°C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid excessive heat for prolonged periods of time.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system. May cause additional affects as listed under "Ingestion".

**Eye contact** Contact with eyes may cause irritation.

**Skin contact** May be absorbed through the skin in harmful amounts. Prolonged contact may cause redness and irritation.

**Ingestion** Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethylene Glycol | = 7712 mg/kg (Rat)<br>ECHA Data | > 3500 mg/kg (Mouse)<br>ECHA Data | > 2.5 mg/l (Rat) 6 hour<br>ECHA Data |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Ingestion. Inhalation.

**Routes of entry** Skin contact. Skin absorption. Ingestion.

**Specific target organ toxicity - Single exposure** Not classified

| | |
|---|---|
| **Specific target organ toxicity - Repeated exposure** | Category 2. |
| **Target organ effects** | Kidney. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

Listed on PLONOR list of OSPAR
The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethylene Glycol | 40000 - 60000 mg/L LC50 (Pimephales promelas) = 96 h<br><br>40761 mg/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>27540 mg/L LC50 (Lepomis macrochirus) = 96 h<br><br>14 - 18 mL/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>16000 mg/L LC50 (Poecilia reticulata) = 96 h<br><br>41000 mg/L LC50 (Oncorhynchus mykiss) = 96 h | 6500 - 13000 mg/L EC50 (Pseudokirchneriella subcapitata) = 96 h | 46300 mg/L EC50 (Daphnia magna) = 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Ethylene Glycol | Readily biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Ethylene Glycol | log Pow -1.36(Calculated) Not likely to bioaccumulate |

**log Pow**
-1.36

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| Ethylene Glycol | Completely soluble |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Ethylene Glycol | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.
Proper Shipping Name: Ethylene glycol. Ship Type:- 3. Pollution Category:- Y.

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
Australian Standard for the Uniform Scheduling of Drugs and Poisons
Ethylene Glycol
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 17-Dec-2014 |
| **Revision date** | 19-Mar-2018 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Follow general hygiene considerations recognized as common good workplace practices

**SDS no.** D182
**Version** 4
**Revision date** 14-Jan-2021
**Supersedes Date:** 06-Jul-2020

# Safety Data Sheet
## MUDPUSH* II Spacer D182

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** MUDPUSH* II Spacer D182
**Product code** D182

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Incompatible with oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders<br>Use protective gloves made of: Rubber Neoprene Nitrile<br>Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Mild Sweet |
| **Color** | Red brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | ~8 | 650g/l (Soln) |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | Not applicable | |
| **Specific gravity** | 1.3 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Partly soluble Gel in contact with water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 242 °C / 468 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Take precautionary measures against static charges.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. |
| **Eye contact** | Dust contact with the eyes can lead to mechanical irritation. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

### 12.4 Mobility

**Mobility**
Partly soluble. Gel in contact with water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not classified |
| **Group number** | Not classified |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 06-Jul-2020 |
| **Revision date** | 14-Jan-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 15. Regulatory Information No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D161
**Version** 6
**Revision date** 15-Mar-2021
**Supersedes Date:** 11-Feb-2016

# Safety Data Sheet
## Multi-Temperature Cement Retarder D161

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Multi-Temperature Cement Retarder D161
**Product code** D161

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Reproductive toxicity | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H361 - Suspected of damaging fertility or the unborn child

**Precautionary statements**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

–

**Contains**
Sodium pentaborate

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium pentaborate | 234-522-7 | 12007-92-0 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Oxides of phosphorus, Carbon oxides (COx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store away from heat and sources of ignition Avoid extreme temperatures Store above 0°C Store away from incompatibles, Strong reducing agents Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium pentaborate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium pentaborate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium pentaborate | Not determined | Not determined | Not determined |

| Chemical Name | Malaysia | Philippines | Russia |
|---|---|---|---|
| Sodium pentaborate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium pentaborate | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile PVA PVC
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Slight |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6.9 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | ~0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | Non-flammable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.073 - 1.077 g/ml @ 20 °C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Avoid extreme temperatures. Do not freeze.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong reducing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort. May cause damage to organs through prolonged or repeated exposure.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium pentaborate | No data available | LD50 > 2000 mg/kg bw | LC50 > 2.03 mg/l |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** Product is or contains a chemical which is a known or suspected reproductive hazard.

**Routes of Exposure** Skin contact. Eye contact. Ingestion.

**Routes of entry** Ingestion.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium pentaborate | LC50: 600 mg/l 96h | No information available | LC50: 86 mg/l 48h |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused** Dispose of in accordance with local regulations.

**products**

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies Volume restriction. |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **Eurasian Economic Union: Russian Inventory** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 11-Feb-2016 |
| **Revision date** | 15-Mar-2021 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** U066
**Version** 3
**Revision date** 03-Sep-2018
**Supersedes Date:** 28-Sep-2016

# Safety Data Sheet
## Mutual Solvent U66

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Mutual Solvent U66
**Product code** U066

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Solvent in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 4 |
| Acute toxicity - Inhalation (Vapors) | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H332 - Harmful if inhaled

**Precautionary statements**
P280 - Wear protective gloves and eye/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P362 - Take off contaminated clothing and wash before reuse

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/ container to an approved waste disposal plant

**Contains**
2-butoxyethanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-butoxyethanol | 203-905-0 | 111-76-2 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Get immediate medical attention.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Extinguish with carbon dioxide, dry chemical, foam or waterspray.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors or mists. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil. Keep out of waterways.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded Keep away from direct sunlight. Incompatible with oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

## 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-butoxyethanol | 25 ppm TWA<br>121 mg/m³ TWA | 50ppmSTEL<br>242mg/m³STEL<br>20ppmTWA<br>96.9mg/m³TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-butoxyethanol | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Skin notation | 25 ppm ACL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-butoxyethanol | 5 mg/m³ MAC | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Possibility of significant uptake through the skin*1) |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2-butoxyethanol | 20 ppm TWA<br>96.7 mg/m³ TWA<br>Skin notation*3) | skin - potential for cutaneous absorption<br>50 ppm TWA<br>240 mg/m³ TWA | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-butoxyethanol | 50 ppm TWA | Not determined | 50 ppm STEL<br>246 mg/m³ STEL<br>Skin*2)<br>20 ppm TWA<br>98 mg/m³ TWA |

**Notes**
No biological limit allocated

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Safety glasses with side-shields For spills and emergencies, also wear face shield Use eye protection according to EN 166, designed to protect against liquid splashes

**Hand protection**
Impervious gloves made of: Rubber PVC Neoprene Be aware that liquid may penetrate the gloves. Frequent change is advisable. Wear gloves according to EN 374 resistant to the solvent(s) in use
Butyl rubber
Break through time >480 minutes
Glove thickness 0.5 mm
or
Impervious gloves of Fluorinated rubber
Break through time >480 minutes
Glove thickness mm 0.4

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators In case of inadequate ventilation wear respiratory protection Use respirator with organic vapor protection (A, brown) At work in confined or poorly

ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information Local authorities should be advised if significant spillages cannot be contained

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Ether |
| **Color** | Colorless |
| **Odor threshold** | No information available |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -70 °C / -94 °F | |
| **Boiling point/range** | ~170 °C / 338 °F | |
| **Flash point** | 66 °C / 150.8 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | 10.6 % | |
| **Lower flammability limit** | 1.1 % | |
| **Vapor pressure** | 0.1 kPa | @ 25 °C |
| **Vapor density** | 4.1 (air = 1) | |
| **Specific gravity** | 0.9 g/cm$^3$ | 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | ~ 240 °C / 464 °F | |
| **Decomposition temperature** | > 242°C / 467.6 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 3 mPa s @25 °C | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | None known |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

| | |
|---|---|
| **VOC content(%)** | 100 |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep away from direct sunlight.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Harmful by inhalation. |
| **Eye contact** | Causes serious eye irritation. |
| **Skin contact** | Harmful in contact with skin. May be absorbed through the skin in harmful amounts. Irritating to skin. |
| **Ingestion** | Harmful if swallowed. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-butoxyethanol | 1200 mg/kg (Guinea pigs) | > 2000 mg/kg (Rat) | 400 ppm ( Rabbit) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. Ingestion. |
| **Routes of entry** | Inhalation. Skin absorption. Eye contact. Skin contact. Ingestion. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Target organ effects** | Kidney. Central nervous system. Blood. Liver. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-butoxyethanol | = 2950 mg/L LC50 Lepomis macrochirus 96 h = 1490 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea) |

### 12.2 Persistence and degradability

Product is biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-butoxyethanol | Readily biodegradable |

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

| Chemical Name | Bioaccumulation |
|---|---|

| | |
|---|---|
| 2-butoxyethanol | Not likely to bioaccumulate |

**log Pow**
0.81

### 12.4 Mobility

**Mobility**
Soluble in water.

| Chemical Name | Mobility |
|---|---|
| 2-butoxyethanol | Soluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| 2-butoxyethanol | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-butoxyethanol
Schedule 6

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 28-Sep-2016 |
| **Revision date** | 03-Sep-2018 |
| **Version** | 3 |

**This SDS has been revised in the following section(s)** 1, 2, 7, 8, 15, 16 No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 2 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 143482
**Version** 1
**Revision date** 01-Oct-2019
**Supersedes Date:** None

# Safety Data Sheet
## NaCl COMPLETION BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** NaCl COMPLETION BRINE
**Product code** 143482

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Completion brine.

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

### Signal word

None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium Chloride

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium Chloride | 231-598-3 | 7647-14-5 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

| | |
|---|---|
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Oxides of:, Sodium, Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium Chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Butyl PVC<br>Break through time >480 minutes<br>Glove thickness =>0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Light amber |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |

| | |
|---|---|
| **Water solubility** | No data available |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium Chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |

| | | | |
|---|---|---|---|
| | 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | | |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
No information available.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Revision date** | 01-Oct-2019 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 141991
**Version** 3
**Revision date** 11-Jun-2020
**Supersedes Date:** 23-Dec-2016

# Safety Data Sheet
## NaCl POLYMER SYSTEM

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** NaCl POLYMER SYSTEM
**Product code** 141991

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Barite

Sodium Chloride

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Barite | 236-664-5 | 13462-86-7 | 30-60 |
| Sodium Chloride | 231-598-3 | 7647-14-5 | 1-5 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | < 3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

| | |
|---|---|
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| Barite | Not determined | Not determined | Not determined |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Barite | Not determined | Not determined | Not determined |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Neoprene PVC
Break through time >480 minutes
Glove thickness 0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more

information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Slight |
| **Color** | Light gray |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.2 - 1.6 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Barite | No information available | No information available | No information available |
| Sodium Chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Barite | Inorganic compound |
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Barite | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Barite | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Barite | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 23-Dec-2016

| | |
|---|---|
| **Revision date** | 11-Jun-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

**SDS no.** 143774
**Version** 2
**Revision date** 27-May-2020
**Supersedes Date:** 10-Apr-2012

# Safety Data Sheet
## NaCl/KCl BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** NaCl/KCl BRINE
**Product code** 143774
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium Chloride

Potassium Chloride

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium Chloride | 231-598-3 | 7647-14-5 | 10-30 |
| Potassium Chloride | 231-211-8 | 7447-40-7 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Sodium oxides, Potassium oxides, Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |

| Chemical Name | Thailand | Vietnam | Turkey |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness =>0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | ~7 | |
| **pH @ dilution** | No information available | |

| | |
|---|---|
| **Melting / freezing point** | No information available |
| **Boiling point/range** | > 100 °C / > 212 °F |
| **Flash point** | No information available |
| **Evaporation rate (BuAc =1)** | No information available |
| **Flammability (solid, gas)** | Not applicable |
| **Flammability Limit in Air** | |
| **Upper flammability limit** | Not applicable |
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | 1.15 - 1.21 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium Chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium Chloride
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 10-Apr-2012 |
| **Revision date** | 27-May-2020 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change This SDS have been made in a new database and therefore a new layout. No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS**

**information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D264
**Version** 2
**Revision date** 19-Jul-2018
**Supersedes Date:** 31-Oct-2017

# Safety Data Sheet
## Nano-Sealant D264

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Nano-Sealant D264
**Product code** D264

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Silicon Dioxide

Ethylene Glycol

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Silicon Dioxide | 231-545-4 | 7631-86-9 | 10-30 |
| Ethylene Glycol | 203-473-3 | 107-21-1 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating and toxic gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away

traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Silicon Dioxide | Not determined | 2mg/m³TWArespirable dust | Not determined |
| Ethylene Glycol | Not determined | 40ppmSTELvapour<br>104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 39.4 ppm Ceiling<br>100 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Silicon Dioxide | 10 mg/m³ TWA | Not determined | Not determined |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Silicon Dioxide | 1 mg/m³ MAC<br>2 mg/m³ MAC | Not determined | Not determined |
| Ethylene Glycol | 5 mg/m³ MAC | 100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Silicon Dioxide | Not determined | Not determined | 3 mg/m³ STEL<br>6 mg/m³ STEL<br>1 mg/m³ TWA<br>2 mg/m³ TWA<br>Fibrogenic substance in the form of condensation aerosol containing it >60% 1121, 1122<br>Fibrogenic substance also vitreous, |

| | | | |
|---|---|---|---|
| | | | in the form of disintegration aerosol 1123 |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Silicon Dioxide | Not determined | Not determined | Not determined |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA<br>52 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl Nitrile
Break through time >480 minutes
Glove thickness 0.7 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** Aqueous solution
**Odor** Characteristic
**Color** Colorless - Milky white

**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | 9.0 - 10.5 | @ 25 °C |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -7 °C / -20 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 23 hPa (@ 20°C) | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.20-1.23 | @ 20°C. |
| **Water solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | <10 mPa s | |
| **log Pow** | No information available | |

**Explosive properties** None known
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** No information available
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid excessive heat for prolonged periods of time.

**10.5 Incompatible materials**

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Silicon Dioxide | > 5000 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 2.2 mg/L ( Rat ) 1 h |
| Ethylene Glycol | = 4700 mg/kg ( Rat ) | = 9530 µL/kg ( Rabbit ) = 10600 mg/kg ( Rat ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Eye contact. Inhalation. Ingestion.

**Routes of entry** Inhalation. Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Silicon Dioxide | = 5000 mg/L LC50 Brachydanio rerio 96 h | = 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 7600 mg/L EC50 Ceriodaphnia dubia 48 h |
| Ethylene Glycol | 14 - 18 mL/L LC50 Oncorhynchus mykiss 96 h = 41000 mg/L LC50 Oncorhynchus mykiss 96 h = 16000 mg/L LC50 Poecilia reticulata 96 h 40000 - 60000 mg/L LC50 Pimephales promelas 96 h = 40761 mg/L LC50 Oncorhynchus mykiss 96 h = 27540 mg/L LC50 Lepomis macrochirus 96 h | 6500 - 13000 mg/L EC50 Pseudokirchneriella subcapitata 96 h | = 46300 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

No product level data available.

| Chemical Name | Persistence and degradability |
|---|---|
| Silicon Dioxide | No information available |

## 12.3 Bioaccumulative potential

No product level data available.

| Chemical Name | Bioaccumulation |
|---|---|
| Silicon Dioxide | Not likely to bioaccumulate |

## 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ethylene Glycol

Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 31-Oct-2017 |
| **Revision date** | 19-Jul-2018 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING Name change 7. Handling and storage 15. Regulatory Information No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1146
**Version** 7
**Revision date** 08-Jul-2018
**Supersedes Date:** 28-Mar-2017

# Safety Data Sheet
## NUT PLUG* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** NUT PLUG* (All Grades)
**Product code** PID1146

**Synonyms** NUT PLUG* FINE, NUT PLUG* MEDIUM, NUT PLUG* COARSE

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

### 3.2 Mixtures

Not applicable

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance<br>glass;regulated under Quartz 1123, |

| | | | 1124 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders<br>Use protective gloves made of: Neoprene Nitrile<br>Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Tan - Brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 193 °C / 380 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |

| | | |
|---|---|---|
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 - 1.4 | @ 20 °C |
| **Bulk density** | 577–641 kg/m³ / 36–40 lb/ft3 | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | Not applicable | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations**

**2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 28-Mar-2017 |
| **Revision date** | 08-Jul-2018 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | 2, 4, 5, 6, 7, 8, 10, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1163
**Version** 9
**Revision date** 05-Jul-2018
**Supersedes Date:** 06-Apr-2015

# Safety Data Sheet
## OS-1L*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** OS-1L*
**Product code** PID1163

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Oxygen Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Water

Ammonium hydrogensulfite

Sulphur Dioxide (Impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating and toxic gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ammonium hydrogensulfite | 233-469-7 | 10192-30-0 | 40-70 |
| Water | 231-791-2 | 7732-18-5 | 30-60 |
| Sulphur Dioxide (Impurity) | 231-195-2 | 7446-09-5 | <1 |

**Comments**
Sulfur dioxide is not present as a substance. It is formed during decomposition.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Heating or fire can release toxic gas Sulphur dioxide, Nitrogen oxides (NOx), Oxides of:, Ammonia, Amines.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
This product slowly releases sulphur dioxide in contact with air. Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Acids Alkalis Keep at 5-30°C |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Exposure limit noted is for decomposition product Sulfur dioxide. |

No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA | 5ppmSTEL<br>13mg/m³STEL<br>2ppmTWA<br>5.2mg/m³TWA | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm STEL; 10 mg/m³ STEL<br>2 ppm TWA<br>5 mg/m³ TWA | 0.25 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 10 mg/m³ MAC | 13.0 mg/m³ STEL<br>5.0 ppm STEL | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 2 ppm TWA<br>5.2 mg/m³ TWA | 5 ppm TWA<br>13 mg/m³ TWA | Skin notation<br>10 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm TWA | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Pungent Sulfur |
| **Color** | Colorless - Pale yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 4.5 - 5.5 | @ 20 °C |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | ~ 100 °C / 212 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 | |
| **Bulk density** | No information available | |
| **Relative density** | 1.25 - 1.30 kg/dm3 | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Reacts violently with oxidizers. Liberates poisonous sulfur dioxide gas on contact with acid.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep at temperatures between 5-30°C.

### 10.5 Incompatible materials

Strong oxidizing agents. Acids. Alkalis.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Product information** | Bisulfites may cause skin sensitization in sulfite sensitive persons. Bisulfites may also cause respiratory sensitization in asthmatics and sulfite sensitive persons. |
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Causes serious eye irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | No data available | No data available |
| Ammonium hydrogensulfite | LD50= 2746 mg/kg - source: By analogy to product with similar composition. Notes: Related to male<br>LD50> 2150 mg/kg By analogy | LD50> 2000 mg/kg - Duration: 24h. Source: By analogy to product with similar composition | LC50 > 5.5 mg/l - Duration: 4h. Source: By analogy to product with similar composition. |

| | | | |
|---|---|---|---|
| | to product with similar composition. Notes: Related to female | | |
| Sulphur Dioxide (Impurity) | No data available | No data available | = 2500 ppm ( Rat ) 1 h |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact. Inhalation.

**Routes of entry** Eye contact. Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Water | No information available | No information available | No information available |
| Ammonium hydrogensulfite | OECD 203 Fish LC50 > 464 mg/l - Duration h: 96 - Notes: By analogy to product with similar composition | Algae EC50 = 43.8 mg/l - Duration h: 72 - Notes: By analogy to product with similar composition. | Daphnia magna EC50 = 89 mg/l - Duration h: 48 - Notes: By analogy to product with similar composition |
| Sulphur Dioxide (Impurity) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Ammonium hydrogensulfite | Not applicable |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Ammonium hydrogensulfite | No data available |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Ammonium hydrogensulfite | No data available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated
**New Zealand Hazard Classification** Classified

| | |
|---|---|
| **HSNO approval no.** | HSR002503 (Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2017. |
| **Group number** | 6.4A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 06-Apr-2015 |
| **Revision date** | 05-Jul-2018 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1210
**Version** 8
**Revision date** 13-Mar-2019
**Supersedes Date:** 11-Jul-2018

# Safety Data Sheet
## PIPE-LAX* ENV

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** PIPE-LAX* ENV
**Product code** PID1210

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Stuck Pipe Additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Supplementary precautionary statements**
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Potassium hydroxide

### 2.3 Other hazards

Thermal decomposition can lead to release of irritating gases and vapors
Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Potassium hydroxide | 215-181-3 | 1310-58-3 | < 1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Do not induce vomiting without medical advice. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, Carbon dioxide ($CO_2$).

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Potassium hydroxide | Not determined | Not determined | 2 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Potassium hydroxide | Not determined | 2 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Potassium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Potassium hydroxide | 2 mg/m³ Ceiling | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Potassium hydroxide | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** No information available
**Odor** Slight

| | |
|---|---|
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 9.3 | @ 1% |
| **Melting / freezing point** | < /= -5 °C / </= 23 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | 88 °C / 190 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.02 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -37°C / -35°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Potassium hydroxide | = 284 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Potassium hydroxide | = 80 mg/L LC50 Gambusia affinis 96 h | No information available | No information available |

## 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Potassium hydroxide | Inorganic compound |

## 12.3 Bioaccumulative potential

The product contains potentially bioaccumulating substances. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Potassium hydroxide | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Dispersible in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Potassium hydroxide | Easily soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Potassium hydroxide | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium hydroxide
Schedule 6

Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 11-Jul-2018 |
| **Revision date** | 13-Mar-2019 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | 1, 2, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** 141381
**Version** 3
**Revision date** 26-Nov-2018
**Supersedes Date:** 28-Sep-2017

# Safety Data Sheet
## POLYPAC* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLYPAC* (All Grades)
**Product code** 141381

**Synonyms** POLYPAC* ELV, R, UL & POLYPAC* SUPREME R, UL

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Fluid loss reducer. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Polyanionic cellulose

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Polyanionic cellulose | Listed | Proprietary | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sodium oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Keep away from heat and sources of ignition.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Avoid dust formation Protect from moisture Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Polyanionic cellulose | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Polyanionic cellulose | 10 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Polyanionic cellulose | Not determined | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Polyanionic cellulose | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard

present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 6.5 - 8 | @ 1% solution |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 - 1.6 | @ 25 °C |
| **Bulk density** | 400 - 800 kg/m³ | |

| | |
|---|---|
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | > 230°C / 446°F |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | Not determined |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Polyanionic cellulose | = 27000 mg/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Polyanionic cellulose | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 28-Sep-2017 |
| **Revision date** | 26-Nov-2018 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID10571
**Version** 4
**Revision date** 13-Nov-2018
**Supersedes Date:** 03-Dec-2014

# Safety Data Sheet
## POLY-PLUS* 2000

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-PLUS* 2000
**Product code** PID10571
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier. Shale inhibitor. Fluid loss reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic

Alcohol, C11-14-iso-, C13-rich, ethoxylated

Hydrocarbons, C11-C12, isoalkanes, <2% aromatics

Naphtha (petroleum), hydrotreated heavy

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Contaminated surfaces will be extremely slippery

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | 610-193-9 | 445411-73-4 | <25 |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Polymer | 78330-21-9 | <3 |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | 265-150-3 | 64742-48-9 | <10 |
| Naphtha (petroleum), hydrotreated heavy | 265-150-3 | 64742-48-9 | <10 |

**Comments**
The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

Based on test data - Eye Irritation (OECD 405), this product is not irritant.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

| | |
|---|---|
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

Fire or high temperatures create:, Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special**
Extremely slippery when spilled.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Do not flush with water. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Extremely slippery when spilled.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Protect from freezing Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Hydrocarbons, C11-C12, isoalkanes, <2% aromatics: OSHA: 400 mg/m³ (8 hrs) Naphtha (petroleum), hydrotreated heavy: OSHA: 400 mg/m³ (8 hrs)<br>No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Not determined | Not determined | Not determined |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Not determined | Not determined | Not determined |
| Naphtha (petroleum), hydrotreated heavy | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Not determined | Not determined | Not determined |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Not determined | Not determined | Not determined |
| Naphtha (petroleum), hydrotreated heavy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Not determined | Not determined | Not determined |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Not determined | Not determined | Not determined |
| Naphtha (petroleum), hydrotreated heavy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Not determined | Not determined | Not determined |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Not determined | Not determined | Not determined |
| Naphtha (petroleum), hydrotreated heavy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Not determined | Not determined | Not determined |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Not determined | Not determined | Not determined |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Not determined | Not determined | Not determined |
| Naphtha (petroleum), hydrotreated heavy | Not determined | Not determined | Not determined |

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will

vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene PVC<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Faint hydrocarbon |
| **Color** | Milky |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5 - 8 | @ 5 g/l |
| **Melting / freezing point** | < 5 °C / < 41 °F | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2.3 kPa | @ 20 °C |
| **Vapor density** | 0.804 g/litre | @ 20 °C |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |

| | | |
|---|---|---|
| **Relative density** | 1.0 - 1.2 | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150°C / > 302°F | |
| **Kinematic viscosity** | > 20.5 cSt | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Protect from freezing.

**10.5 Incompatible materials**

Oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | > 5000 mg/kg (Rat) | > 2000 mg/kg (Rabbit) | > 2.3 mg/L (Rat) |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | > 2000 mg/kg (Rat) | > 2000 mg/kg (Rat) | No data available |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | > 6000 mg/kg ( Rat ) | > 3160 mg/kg ( Rabbit ) | > 8500 mg/m³ ( Rat ) 4 h |
| Naphtha (petroleum), hydrotreated heavy | > 6000 mg/kg ( Rat ) | > 3160 mg/kg ( Rabbit ) | > 8500 mg/m³ ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | No information available | No information available | No information available |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | No information available | No information available | No information available |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | = 2200 mg/L LC50 Pimephales promelas 96 h | No information available | = 2.6 mg/L LC50 Chaetogammarus marinus 96 h |
| Naphtha (petroleum), hydrotreated heavy | = 2200 mg/L LC50 Pimephales promelas 96 h | No information available | = 2.6 mg/L LC50 Chaetogammarus marinus 96 h |

## 12.2 Persistence and degradability

Not readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | Readily biodegradable OECD 301B 68.1% 28 days |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Readily biodegradable |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | Inherently biodegradable |
| Naphtha (petroleum), hydrotreated heavy | OECD 301 : 31.5% 28 days |

## 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | No information available |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | No information available |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | log Pow : 6.7-7.2 |
| Naphtha (petroleum), hydrotreated heavy | No information available |

## 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | No information available |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | Soluble in water |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | No data available |
| Naphtha (petroleum), hydrotreated heavy | No data available |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Gas oils (petroleum), vacuum, hydrocracked, hydroisomerized, hydrogenated, C10-25, branched and cyclic | No information available |
| Alcohol, C11-14-iso-, C13-rich, ethoxylated | No information available |
| Hydrocarbons, C11-C12, isoalkanes, <2% aromatics | No information available |
| Naphtha (petroleum), hydrotreated heavy | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 03-Dec-2014

**Revision date** 13-Nov-2018

| | |
|---|---|
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1236
**Version** 6
**Revision date** 12-Nov-2018
**Supersedes Date:** 30-Oct-2014

# Safety Data Sheet
## POLY-PLUS* DRY

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-PLUS* DRY
**Product code** PID1236

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale stabilizer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes extremely slippery when wet.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes extremely slippery when wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Suspended dust may present a dust explosion hazard Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene PVC Frequent change is |

| | |
|---|---|
| | advisable |
| **Respiratory protection** | No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Granular |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5-9 | @ 5 g/l |
| **Melting / freezing point** | > 150 °C / 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.25 - 1.40 | 20 °C |
| **Bulk density** | 641-737 kg/m³ / 40 - 46 lb/ft³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150 °C / 302 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Take precautionary measures against static charges. Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) (PRODUCT) |
| **LD50 Dermal** | > 5000 mg/kg (rat) (PRODUCT) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is not biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**

Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 30-Oct-2014

| | |
|---|---|
| **Revision date** | 12-Nov-2018 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID11709
**Version** 3
**Revision date** 27-Oct-2016
**Supersedes Date:** 03-Dec-2014

# Safety Data Sheet
## POLY-PLUS* EHV

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-PLUS* EHV
**Product code** PID11709

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** , No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Large spills released to the environment may disturb the natural chemical balance of soil/fresh water.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

| | |
|---|---|
| **Personal protective equipment** | |
| **Eye protection** | Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Granules Dust |
| **Odor** | None |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 6.0 - 8.0 | @ 1% solution |
| **Melting / freezing point** | > 150 °C / > 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.8 sg (50 lbs./cu. Ft.) | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150°C / 302°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**

The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) |
| **LD50 Dermal** | > 5000 mg/kg (rat) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
IC50/Scenedesmus subspicatus/72 hrs > 100 mg/L (OECD201.

**Toxicity to fish**
LC50/Danio rerio/96 hrs > 100 mg/L (OECD203)
LC50/Oncorhynchus mykiss/96 hrs > 100 mg/L (OECD203).

**Toxicity to daphnia and other aquatic invertebrates**
EC50/Daphnia magna/48 hrs > 100 mg/L OECD202).

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
-2

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Dec-2014 |
| **Revision date** | 27-Oct-2016 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 2, 3, 5, 6, 7, 8, 9, 12, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** PID1241
**Version** 8
**Revision date** 16-Nov-2018
**Supersedes Date:** 26-Oct-2016

# Safety Data Sheet
## POLY-PLUS* RD

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-PLUS* RD
**Product code** PID1241

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard
Contaminated surfaces will be extremely slippery

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes extremely slippery when wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |

| | |
|---|---|
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Granules |
| **Odor** | Slight Hydrocarbon-like |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 7.7 | @ 1% sol. |
| **Melting / freezing point** | > 150 °C / > 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.25 - 1.40 | 20 °C |
| **Bulk density** | 641–737 kg/m³ (40–46 lb/ft²) | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150 °C / > 302 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | -2 | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) (MIXTURE) |
| **LD50 Dermal** | > 5000 mg/kg (rat) (MIXTURE) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.
IC50/Scenedesmus subspicatus/72 hrs: > 100 mg/l (OECD 201).

**Toxicity to fish**
This product is not considered toxic to fish.
LV50/Danio rerio/96 hrs: > 100 mg/l (OECD 203)
LC50/Fathead minnow/96 hrs: > 100 mg/l (OECD 203).

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.
EC50/Daphnia magna/48 hrs.: > 100 mg/l (OECD202).

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**

-2

**12.4 Mobility**

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 26-Oct-2016 |
| **Revision date** | 16-Nov-2018 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1231
**Version** 13
**Revision date** 09-Nov-2018
**Supersedes Date:** 09-Jul-2018

# Safety Data Sheet
## POLY-PLUS*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-PLUS*
**Product code** PID1231

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale control agent. Viscosifier. Friction reducer. Flocculating agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics*

Isotridecanol, ethoxylated

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
May cause slight irritation

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | 920-107-4 | RM1003179 | 30-60 |
| Isotridecanol, ethoxylated | NLP | 69011-36-5 | <3 |

**Comments**
OECD Test No. 437: Bovine Corneal Opacity and Permeability Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage: Not Irritant

The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

.

The product contains other ingredients which do not contribute to the overall classification.

*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

| | |
|---|---|
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Keep away from direct sunlight. Avoid contact with: Oxidizing agents Protect from freezing Keep at >5 - <30°C |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m$^3$ and ST. EXP = 10mg/m$^3$.<br>No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Not determined | Not determined | Not determined |
| Isotridecanol, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Not determined | Not determined | Not determined |
| Isotridecanol, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Not determined | Not determined | Not determined |
| Isotridecanol, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Not determined | Not determined | Not determined |
| Isotridecanol, ethoxylated | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Not determined | Not determined | Not determined |
| Isotridecanol, ethoxylated | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: PVC Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Hydrocarbon-like |
| **Color** | Milky |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 8.0 - 9.0 | @ 1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 93.3 °C / > 200 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 0.002 mmHg | @ 20°C (68°F) °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.07 - 1.10 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | > 20.5 cSt | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -28.9°C / -20°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep away from direct sunlight. Avoid frost. Keep at temperatures between >5-<30°C. Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** OECD Test No. 437: Bovine Corneal Opacity and Permeability Test Method for Identifying i) Chemicals Inducing Serious Eye Damage and ii) Chemicals Not Requiring Classification for Eye Irritation or Serious Eye Damage: Not Irritant.

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | > 5000 mg/kg (OECD 401), Rat | > 5000 mg/kg (OECD 402), Rabbit | = 4951 mg/kg (OECD 403) 4H, Rat |
| Isotridecanol, ethoxylated | 500-2000 mg/kg Rat | > 2000 mg/kg | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
IC50- 72 hours: > 100 mg/l (PRODUCT).

**Toxicity to fish**
LC50 - Oncorhynchus mykiss - 96 hours: > 100 mg/l (PRODUCT).

**Toxicity to daphnia and other aquatic invertebrates**
EC50 - Daphina - 48 hours: > 100 mg/l (PRODUCT).

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | > 1000 mg/l (OECD 201) Oncorhynchus mykiss/96 hours | > 1000 mg/l (OECD 201) Pseudokirchneriella subcapitata/72 hours | > 1000 mg/l (OECD 202) Daphnia magna/48 hours |
| Isotridecanol, ethoxylated | = 1-10 mg/l (OECD 203) Cyprinus carpio/96 hours | = 1-10 mg/l (OECD 201) Desmodesmus subspicatus/72 hours | = 1-10 mg/l (OECD 202) Daphnia magna/72 hours |

### 12.2 Persistence and degradability

Readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Readily biodegradable |
| Isotridecanol, ethoxylated | Readily biodegradable |

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Does not bioaccumulate |
| Isotridecanol, ethoxylated | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | Insoluble |
| Isotridecanol, ethoxylated | Practically insoluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Hydrocarbons, C12-C15, n-alkanes, isoalkanes < 2% aromatics* | No information available |
| Isotridecanol, ethoxylated | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |

| | |
|---|---|
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

CAS Number 64742-47-8 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 09-Jul-2018 |
| **Revision date** | 09-Nov-2018 |
| **Version** | 13 |
| **This SDS has been revised in the following section(s)** | 6. Accidental release measures No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** PID170
**Version** 6
**Revision date** 24-Dec-2018
**Supersedes Date:** 30-Dec-2015

# Safety Data Sheet
## POLY-SAL* HT

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-SAL* HT
**Product code** PID170
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtration-control. / Rheology modifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

-

**Contains**
Starch

Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Starch | Listed | Proprietary | 60-100 |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | 208-576-7 | 533-74-4 | < 1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Suspended dust may present a dust explosion hazard Protect from moisture Avoid contact with: Strong oxidizing agents Sulfuric acid.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Starch | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Starch | Not determined | 10 mg/m³ TWA | Not determined |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Starch | Not determined | Not determined | 10 mg/m³ TWA |

| | | | |
|---|---|---|---|
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | 2 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Starch | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | Not determined | Not determined | 2 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Starch | Not determined | Not determined | Not determined |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 4-7 | 1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | |
| **Bulk density** | 300-700 kg/m³ (19-44 lb/ft3) | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** No information available

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** No information available
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

**10.5 Incompatible materials**

Strong oxidizing agents. Sulfuric acid.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Starch | No data available | No data available | No data available |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | = 550 mg/kg ( Rat ) | = 7 g/kg ( Rabbit ) | = 8400 mg/m³ ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Starch | No information available | No information available | No information available |
| Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione | 0.12 - 0.21 m LC50 Oncorhynchus mykiss 96 h 10.0 - 22.0 mg/L LC50 Cyprinus carpio 96 h 12 - 31.7 mg/L LC50 Oncorhynchus mykiss 96 h 0.2 - 0.4 mg/L LC50 Lepomis macrochirus 96 h | = 1 mg/L EC50 Desmodesmus subspicatus 96 h | 0.26 - 0.37 mg/L EC50 Daphnia magna 48 h 9.5 - 14.8 mg/L EC50 Daphnia magna 48 h = 0.3 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

No product level data available.

## 12.3 Bioaccumulative potential

No product level data available.

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Tetrahydro-3,5-dimethyl-1,3,5-thiadiazine-2-thione
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the**

**occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 30-Dec-2015 |
| **Revision date** | 24-Dec-2018 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness**

**of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1247
**Version** 4
**Revision date** 27-Nov-2017
**Supersedes Date:** 04-Dec-2014

# Safety Data Sheet
## POLY-SAL* T

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLY-SAL* T
**Product code** PID1247
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Fluid loss reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

**Contains**
Starch

### 2.3 Other hazards

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Starch | Listed | Proprietary | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry chemical, $CO_2$, water spray or regular foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. If spilled, take caution, as material can cause surfaces to become very slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Material becomes slippery when wet. Use caution if wet. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery. May cause sensitization of susceptible persons.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Take precautionary measures against static discharges. Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Starch | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Starch | Not determined | 10 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Starch | Not determined | Not determined | 10 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Starch | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Starch | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Local authorities should be advised if significant spillages cannot be contained See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules Powder Dust |
| **Odor** | Odorless |
| **Color** | Tan |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5 - 7 | @ 4% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |

| | |
|---|---|
| **Lower flammability limit** | Not applicable |
| **Vapor pressure** | No information available |
| **Vapor density** | No information available |
| **Specific gravity** | No information available |
| **Bulk density** | 400 - 561 kg/m³ / 23 - 35 lb/ft³ |
| **Relative density** | 1.5 sg |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Protect from moisture. Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Starch | No data available | No data available | No data available |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Starch | No information available | No information available | No information available |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 04-Dec-2014 |
| **Revision date** | 27-Nov-2017 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID676
**Version** 4
**Revision date** 23-Nov-2018
**Supersedes Date:** 27-Oct-2016

# Safety Data Sheet
## POLYSWELL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POLYSWELL*
**Product code** PID676

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to applicable federal, state and local regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Swells on contact with water. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with

water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep at 0-35°C Avoid contact with: Oxidizing agents Strong acids |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | None |
| **Color** | White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | > 150 °C / > 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.8 - 1.0 | |
| **Bulk density** | 0.65 - 0.75 | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water Swells on contact with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150°C / 302°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep at temperatures between 0-35°C.

### 10.5 Incompatible materials

Oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) (MIXTURE) |
| **LD50 Dermal** | > 5000 mg/kg (rat) (MIXTURE) |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
IC50/Scenedesmus subspicatus/72 hrs > 100 mg/L (OECD201.

**Toxicity to fish**
LC50/Danio rerio/96 hrs > 100 mg/L (OECD203)
LC50/Oncorhynchus mykiss/96 hrs > 100 mg/L (OECD203).

**Toxicity to daphnia and other aquatic invertebrates**
EC50/Daphnia magna/48 hrs > 100 mg/L OECD202).

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

**log Pow**
-2

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 27-Oct-2016 |
| **Revision date** | 23-Nov-2018 |
| **Version** | 4 |

**This SDS has been revised in the following section(s)** All sections No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** 143296
**Version** 1
**Revision date** 07-May-2019
**Supersedes Date:** None

# Safety Data Sheet
## POROSEAL* Plus

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POROSEAL* Plus
**Product code** 143296
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Hydrocarbon.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away

traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from freezing Avoid extreme temperatures Keep away from direct sunlight. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Use protective gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness 0.4 mm |

| | |
|---|---|
| | Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Milky |
| **Odor** | Mild |
| **Color** | White |
| **Odor threshold** | No information available |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 5 - 8 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 93 °C / 200 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 17.5 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.03 | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from freezing. Avoid extreme temperatures. Keep away from direct sunlight.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |

| | |
|---|---|
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Revision date** | 07-May-2019 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories

National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID17311
**Version** 6
**Revision date** 25-Mar-2021
**Supersedes Date:** 07-Apr-2016

# Safety Data Sheet
## POROSEAL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POROSEAL*
**Product code** PID17311
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Filtration-control. Shale stabilizer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin sensitization | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H317 - May cause an allergic skin reaction

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | mixture | 55965-84-9 | < 0.005 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth

to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Hydrocarbon.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from freezing

**Storage class** Chemical storage.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** The product does not contain any hazardous materials with occupational exposure limits established.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Milky white |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 10 | conc. sol. |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 100 °C / > 212 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | 17.5 mmHg | @ 20 °C |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 1.02 | |
| **Bulk density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | Not applicable | |
| **Oxidizing properties** | None known. | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid heat, flames and other sources of ignition. Protect from freezing.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one | = 53 mg/kg ( Rat ) | No data available | = 1.23 mg/L ( Rat ) 4 h = 0.11 mg/L ( Rat ) 4 h |

**Sensitization** May cause sensitization by skin contact.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish. LC50 (96 hrs): 16188 mg/l (estimated).

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates. EC50 (48 hrs): 7471 mg/l (estimated).

**Toxicology data for the components**

**12.2 Persistence and degradability**
Not readily biodegradable.

**12.3 Bioaccumulative potential**
No product level data available.

**12.4 Mobility**
**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

**12.5 Other adverse effects**
None known.

**12.6 Other information.**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one
Schedule 6

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

This SDS is not for use in the European Union (EU).

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

| | |
|---|---|
| **Supersedes Date:** | 07-Apr-2016 |
| **Revision date** | 25-Mar-2021 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Follow general hygiene considerations recognized as common good workplace practices
Do not handle until all safety precautions have been read and understood

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

# Safety Data Sheet
# POTASSIUM CHLORIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POTASSIUM CHLORIDE BRINE
**Product code** PID1290

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains**
Potassium Chloride

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Potassium Chloride | 231-211-8 | 7447-40-7 | 5-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Potassium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Potassium Chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will

vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | ~ 7 | Conc.solution |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -7 °C / 19.4 °F | |
| **Boiling point/range** | 102 °C / 215.6 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |

| | |
|---|---|
| **Specific gravity** | 1.01 - 1.17 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids. Strong alkalies.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z. Proper Shipping Name: Potassium chloride solution

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium Chloride
Schedule 4

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 27-Jul-2017 |
| **Revision date** | 14-Sep-2020 |
| **Version** | 12 |
| **This SDS has been revised in the following section(s)** | 2, 7, 8, 9, 11, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** M117
**Version** 4
**Revision date** 20-Jun-2018
**Supersedes Date:** 14-May-2015

# Safety Data Sheet
## Potassium Chloride M117

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Potassium Chloride M117
**Product code** M117

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Clay control agent in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

**4.3 Indication of any immediate medical attention and special treatment needed**

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating and toxic gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

#### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Crystalline |
| **Odor** | Very faint |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 8-11 | H2O soln |
| **Melting / freezing point** | 770 °C / 1418 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 1.100 kg/m³ | |
| **Relative density** | 1.989 g/cm³ | |
| **Water solubility** | 300 g/l | @ 20 °C |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation.

### 10.5 Incompatible materials

No information available.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 14-May-2015 |
| **Revision date** | 20-Jun-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

**SDS no.** PID16813
**Version** 3
**Revision date** 28-Jun-2017
**Supersedes Date:** 03-Sep-2015

# Safety Data Sheet
## POWERVIS*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** POWERVIS*
**Product code** PID16813

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components
**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep away from heat, sparks, and flame. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, |

respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Slight |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | ~7 | @ 1% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.5 sg | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | ~351 °C / ~663.8 °F | |
| **Decomposition temperature** | ~175°C / ~347°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) (product) |
| **LC50 Inhalation** | > 5 mg/l (dust) (rat, 4 hr) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Sep-2015 |
| **Revision date** | 28-Jun-2017 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | 4, 8, 9, 10, 11, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID4
**Version** 9
**Revision date** 13-Mar-2019
**Supersedes Date:** 07-Jul-2018

# Safety Data Sheet
PTS-200*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** PTS-200*
**Product code** PID4

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Temperature stabilizer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 1 Subcategory 1B |
| Serious eye damage/eye irritation | Category 1 |
| Specific target organ toxicity - Single exposure | Category 3 |

**Environmental hazards**

| | |
|---|---|
| Acute aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
2-aminoethanol

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-aminoethanol | 205-483-3 | 141-43-5 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Immediate medical attention is required.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use halon type extinguisher.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Ammonia.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Prevent the formation of vapors, mists and aerosols. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong acids Strong oxidizing agents Nitrites Aluminum Copper Carbon steel Avoid extreme temperatures Keep away from direct sunlight.

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-aminoethanol | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA | 6ppmSTEL<br>15mg/m³STEL<br>3ppmTWA<br>7.5mg/m³TWA | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-aminoethanol | Not determined | 3 ppm TWA<br>Skin notation<br>6 ppm STEL | 3 ppm OEL<br>7.5 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-aminoethanol | 0.5 mg/m³ MAC | 15.0 mg/m³ STEL<br>6.0 ppm STEL | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2-aminoethanol | 3 ppm TWA<br>7.5 mg/m³ TWA | 3 ppm TWA<br>6 mg/m³ TWA | 0.5 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-aminoethanol | 3 ppm TWA | 8 mg/m³ TWA<br>15 mg/m³ STEL | 3 ppm STEL<br>7.6 mg/m³ STEL<br>Skin<br>1 ppm TWA<br>2.5 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical

hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes<br>Chemical splash goggles and/or face shield |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Nitrile<br>Break through time >480 minutes<br>Glove thickness 0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Amine |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 11.5 - 12 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 171 °C / 340 °F | |
| **Flash point** | > 96 °C / > 205 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 70 hPa | @ 20 °C |

| | |
|---|---|
| **Vapor density** | No information available |
| **Specific gravity** | 1.0 - 1.02 |
| **Bulk density** | No information available |
| **Relative density** | No information available |
| **Water solubility** | Soluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | Not applicable |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Corrosive.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Not known.

**10.4 Conditions to avoid**

Avoid extreme temperatures. Keep away from direct sunlight.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids. Nitrites. Aluminum. Copper. Carbon steel.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Harmful by inhalation. Corrosive to the respiratory tract. May cause respiratory irritation. Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of

| | |
|---|---|
| | breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing. |
| **Eye contact** | Causes serious eye damage. May cause irreversible damage to eyes. |
| **Skin contact** | Harmful in contact with skin. Causes severe skin burns. May be absorbed through the skin in harmful amounts. |
| **Ingestion** | Harmful if swallowed. Can burn mouth, throat, and stomach. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-aminoethanol | = 1720 mg/kg (Rat) | = 1000 mg/kg (Rabbit)<br>= 1 mL/kg (Rabbit) | > 1.3 mg/l Vapour 6h (Rat) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Ingestion. Inhalation. |
| **Routes of entry** | Ingestion. Inhalation. Skin contact. Eye contact. |
| **Specific target organ toxicity - Single exposure** | Category 3 |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Target organ effects** | Respiratory system. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

**12.1 Toxicity**

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**

See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-aminoethanol | > 200 mg/L LC50 Oncorhynchus mykiss 96 h<br>= 3684 mg/L LC50 Brachydanio rerio 96 h<br>300 - 1000 mg/L LC50 Lepomis macrochirus 96 h<br>114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h<br>= 227 mg/L LC50 Pimephales promelas 96 h | = 15 mg/L EC50 Desmodesmus subspicatus 72 h | = 65 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-aminoethanol | Readily biodegradable |

## 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2-aminoethanol | Does not bioaccumulate log Kow -1.91 |

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

.

.

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN2491 |
| **UN No. (IMDG/ANTAQ)** | UN2491 |
| **UN No. (ICAO/ANAC)** | UN2491 |

**14.2. UN proper shipping name**
Ethanolamine solution

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | III |
| **IMDG/ANTAQ Packing group** | III |
| **ICAO/ANAC Packing group** | III |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002984 (Ethanolamine, >26% in a non hazardous diluent) |
| **Group number** | N/A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 07-Jul-2018 |
| **Revision date** | 13-Mar-2019 |

| | |
|---|---|
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | 1, 2, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** D013
**Version** 6
**Revision date** 15-Jan-2020
**Supersedes Date:** 17-Nov-2015

# Safety Data Sheet
## Retarder D013

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Retarder D013
**Product code** D013

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Sulphur oxides, Carbon oxides (COx), Heating or fire can release toxic gas.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong oxidizing agents Strong acids Strong alkalies. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Rubber Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Faint |
| **Color** | Brown |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 4 - 5 | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.2 | 20 °C |
| **Bulk density** | 480 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Take precautionary measures against static charges. Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong alkalies.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause irritation of respiratory tract. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. Skin contact. Eye contact. |
| **Routes of entry** | Inhalation. |

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 17-Nov-2015 |
| **Revision date** | 15-Jan-2020 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D111
**Version** 6
**Revision date** 13-Nov-2019
**Supersedes Date:** 01-Aug-2016

# Safety Data Sheet
## RFC Agent D111

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** RFC Agent D111
**Product code** D111

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Corrosive to Metals | Category 1 |

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P406 - Store in corrosion resistant container with a resistant inner liner

**Supplementary precautionary statements**
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Aluminum sulfate hydrate

Iron sulphate

Sulfuric acid

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Aluminum sulfate hydrate | 233-135-0 | 10043-01-3 | 30-60 |
| Iron sulphate | 231-753-5 | 7720-78-7 | 1-5 |
| Sulfuric acid | 231-639-5 | 7664-93-9 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Immediate medical attention is required.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapors Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong bases Metals

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Aluminum sulfate hydrate | Not determined | 2mg/m³TWA | Not determined |
| Iron sulphate | Not determined | 1mg/m³TWA | Not determined |
| Sulfuric acid | 3 mg/m³ STEL<br>1 mg/m³ TWA | 3mg/m³STEL<br>1mg/m³TWA | 3 mg/m³ STEL<br>Suspected Human Carcinogen<br>1 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Aluminum sulfate hydrate | Not determined | Not determined | Not determined |
| Iron sulphate | Not determined | Not determined | Not determined |
| Sulfuric acid | 1 mg/m³ TWA | Not determined | 1 mg/m³ Ceiling |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Aluminum sulfate hydrate | Not determined | Not determined | Not determined |
| Iron sulphate | Not determined | Not determined | Not determined |
| Sulfuric acid | 1 mg/m³ MAC | 1.0 mg/m³ TWA<br>3.0 mg/m³ STEL | 1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Aluminum sulfate hydrate | Not determined | Not determined | 2 mg/m³ STEL<br>0.5 mg/m³ TWA |
| Iron sulphate | Not determined | Not determined | Not determined |
| Sulfuric acid | 1 mg/m³ TWA | 1 mg/m³ TWA | Skin notation<br>1 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Aluminum sulfate hydrate | Not determined | Not determined | Not determined |
| Iron sulphate | Not determined | Not determined | Not determined |
| Sulfuric acid | 1 mg/m³ TWA | 1 mg/m³ TWA<br>2 mg/m³ STEL | 0.05 mg/m³ TWA |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Rubber
Break through time >480 minutes

| | |
|---|---|
| | Glove thickness >=0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Solution |
| **Odor** | None |
| **Color** | Light green |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 1.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / 212 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.3 | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 10 mm2/s | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive. Corrosive to Metals.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Strong bases. Metals.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhaled corrosive substances can lead to a toxic edema of the lungs. |
| **Eye contact** | Causes serious eye damage. |
| **Skin contact** | Causes severe skin burns. |
| **Ingestion** | Ingestion causes burns of the upper digestive and respiratory tracts. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Aluminum sulfate hydrate | = 1930 mg/kg ( Rat ) | No data available | No data available |
| Iron sulphate | = 319 mg/kg ( Rat ) | = 155 mg/kg ( Rat ) | No data available |
| Sulfuric acid | = 2140 mg/kg ( Rat ) | No data available | 85 - 103 mg/m³ ( Rat ) 1 h |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Inhalation. Eye contact. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Aluminum sulfate hydrate | = 37 mg/L LC50 Gambusia affinis 96 h = 100 mg/L LC50 Carassius auratus 96 h | No information available | = 136 mg/L EC50 Daphnia magna 15 min |
| Iron sulphate | = 0.56 mg/L LC50 Cyprinus carpio 96 h = 925 mg/L LC50 Poecilia reticulata 96 h | No information available | 6.15 - 9.26 mg/L EC50 Daphnia magna 48 h = 152 mg/L EC50 Daphnia magna 48 h |
| Sulfuric acid | > 500 mg/L LC50 Brachydanio rerio 96 h | No information available | = 29 mg/L EC50 Daphnia magna 24 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN 3264 |
| **UN No. (IMDG/ANTAQ)** | UN 3264 |
| **UN No. (ICAO/ANAC)** | UN 3264 |

### 14.2. UN proper shipping name

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains sulfuric acid),

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | III |
| **IMDG/ANTAQ Packing group** | III |
| **ICAO/ANAC Packing group** | III |


**14.5 Environmental hazard**

No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Australian Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP)
Iron sulphate
Schedule 4
Schedule 6
Schedule 5
Sulfuric acid
Schedule 6

| | |
|---|---|
| **HSNO approval no.** | HSR002542 |
| **Group number** | 8.1A, 8.3A, 8.2 |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 01-Aug-2016 |
| **Revision date** | 13-Nov-2019 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2687
**Version** 4
**Revision date** 04-Mar-2019
**Supersedes Date:** 29-Jun-2015

# Safety Data Sheet
## SACK BLACK*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SACK BLACK*
**Product code** PID2687
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd / ALPINE
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. If spilled, take caution, as material can cause surfaces to become very slippery. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard

present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Black |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 140-205 °C / 284-401 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | 315 °C / 590 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.04 - 1.06 | @ 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 500 °C / 932 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 29-Jun-2015 |
| **Revision date** | 04-Mar-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1361
**Version** 10
**Revision date** 09-Feb-2019
**Supersedes Date:** 07-Jul-2018

# Safety Data Sheet
## SAFE-CARB* (All Grades)

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-CARB* (All Grades)
**Product code** PID1361

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material. Weighting agent. Bridging material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Calcium carbonate

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Product dust may be irritating to eyes, skin and respiratory system

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**3.2 Mixtures**

Not applicable

**Comments**
Naturally occuring mineral.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn.

Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA |

| | | | Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against powders and dusts
Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Repeated or prolonged contact
Use protective gloves made of: Nitrile Neoprene
Frequent change is advisable

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Solid
**Appearance** Powder Dust
**Odor** Odorless
**Color** White
**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |

| | | |
|---|---|---|
| **pH @ dilution** | 8.5 - 9.5 | @ 100 g/l |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.6 - 2.8 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | 825 °C / 1517°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium carbonate | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 07-Jul-2018 |
| **Revision date** | 09-Feb-2019 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | 1, 8, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1370
**Version** 12
**Revision date** 14-Nov-2019
**Supersedes Date:** 11-Jan-2017

# Safety Data Sheet
## SAFE-COR*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-COR*
**Product code** PID1370

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Corrosion inhibitor

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | 272-712-1 | 68909-77-3 | 30-60 |

**Comments**
Based on test data – Skin corrosion/irritation (OECD 404 Skin Rabbit), this product is not corrosive or irritant.
Based on test data – Serious eye damage/irritation (EPA OPPTS: 870.2400 Eye Rabbit), this product is irritant.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid frost. Store at room temperature Avoid contact with: Acids Nitrites |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Contains no substances with occupational exposure limit values No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Neoprene PVC Nitrile
Break through time >480 minutes
Glove thickness 0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing and gloves, including the inside, before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Dark amber |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | ~ 11.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 100 °C / > 212 °F | |
| **Flash point** | 151.6 °C / 305 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.10 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 4 cP | @ 25 °C |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -12°C (<11°F ) |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Store at room temperature. Avoid frost.

### 10.5 Incompatible materials

Acids. Do not add nitrites or other nitrosating agents to this product. May cause formation of nitrosamine.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | 5000 mg/kg (Rat) | >2000 mg/kg (Rat) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity -** Not classified.

**Repeated exposure**

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivs. residues | OECD; Acute LC50; 96 hours Semi-static; Fish > 45 g/l | OECD; Acute ErC50 (growth rate); 72 hours Static; Algae; 45 mg/kg OECD 201 Algae, Growth Inhibitor Test; Chronic NOECr; 72 hours Static; Algae; 3.2 mg/l | OECD; Acute EC50; 48 hours Static, Daphnia; > 100 g/l |

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

No bioaccumulation expected due to high molecular weight.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR003599 |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 11-Jan-2017 |
| **Revision date** | 14-Nov-2019 |
| **Version** | 12 |
| **This SDS has been revised in the following section(s)** | 1, 2, 7, 8, 9, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2290
**Version** 7
**Revision date** 20-Sep-2019
**Supersedes Date:** 24-Apr-2019

# Safety Data Sheet
## SAFE-LUBE*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-LUBE*
**Product code** PID2290
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lubricant

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards**

| | |
|---|---|
| Acute aquatic toxicity | Category 2 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation
H401 - Toxic to aquatic life

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P391 - Collect spillage

**Contains**
1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | 280-518-3 | 83682-78-4 | 5-<10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Characteristic |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 6.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | > 93 °C / > 200 °F | |
| **Flash point** | > 93 °C / > 200 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.01 | @ 16 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | > 2000 mg/kg (Rat) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Eye contact. |
| **Routes of entry** | Eye contact. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

Toxic to aquatic life

**Toxicity to algae**
EC50 1.9mg/l Skeletonema costatum (72h) - SLB Product level Data.

**Toxicity to fish**
LC50 > 4mg/l Scophthalmus maximus (96h) - SLB Product level Data.

**Toxicity to daphnia and other aquatic invertebrates**
LC50 31.5 mg/l Acartia tonsa (48h) - SLB Product level Data.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 1-Propanaminium, 3,3',3''-[phosphinylidynetris(oxy)]tris[N-(3-aminopropyl)-2-hydroxy-N,Ndimethyl-, N,N',N''-tri-C6-18 acyl derivs, trichlorides | LC50 1-10mg/l 96h | EC50 0.19 mg/l 72h | EC50 1-10mg/l 48h |

### 12.2 Persistence and degradability

This product is expected to be readily biodegradable.

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 24-Apr-2019 |
| **Revision date** | 20-Sep-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. |

**Key literature references and sources for data**

www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1387
**Version** 9
**Revision date** 24-Oct-2019
**Supersedes Date:** 23-Nov-2016

# Safety Data Sheet
## SAFE-SCAV* CA

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SCAV* CA
**Product code** PID1387

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Oxygen Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Suspended dust may present a dust explosion hazard

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Take precautionary measures against static discharges. After cleaning,

flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents Strong bases Metals |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Butyl Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European |

| | |
|---|---|
| | Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Crystalline |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 5.5 - 8.0 | @ 10% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.65 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |

| | |
|---|---|
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges.

### 10.5 Incompatible materials

Metals. Strong bases. Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | None known. |
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 23-Nov-2016 |
| **Revision date** | 24-Oct-2019 |
| **Version** | 9 |

**This SDS has been revised in the following section(s)** 4, 6, 7, 8, 15, 16 No changes with regard to classification have been made.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1388
**Version** 11
**Revision date** 13-Mar-2019
**Supersedes Date:** 02-Feb-2018

# Safety Data Sheet
## SAFE-SCAV* HS

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SCAV* HS
**Product code** PID1388

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Hydrogen Sulphide Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Vapors) | Category 2 |
| Serious eye damage/eye irritation | Category 2 |
| Skin sensitization | Category 1 |
| Specific target organ toxicity - Repeated exposure | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H330 - Fatal if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P391 - Collect spillage

**Contains**
Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine

2-aminoethanol (Impurity)

Formaldehyde (impurity)

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

H330 classification is applied due to Inhalation Acute Toxicity studies carried out in Aerosol form
Prevent the formation of aerosols.

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | 225-208-0 | 4719-04-4 | 30-60 |
| 2-aminoethanol (Impurity) | 205-483-3 | 141-43-5 | <2 |
| Formaldehyde (impurity) | 200-001-8 | 50-00-0 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
Formaldehyde is not present as a substance. It is formed during decomposition.

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.
Note D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generallyplaced on the market in a stabilised form. It is in this form that they are listed in Part 3.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — Call a physician or poison control center immediately. Move the exposed person to fresh air at once. Keep at rest. If breathing is difficult, (trained personnel should) give oxygen.

**Ingestion** — Rinse mouth. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Seek medical attention at once.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention at once.

**Eye Contact** — Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use halon type extinguisher.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Formaldehyde.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not breathe vapors or spray mist. Avoid contact with skin and eyes. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product. Prevent the formation of vapors, mists and aerosols.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid frost. Avoid contact with: Strong acids Strong oxidizing agents

**Storage class** Toxic storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Formaldehyde is not present as a substance. It is formed during decomposition.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| 2-aminoethanol (Impurity) | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA | 6ppmSTEL<br>15mg/m³STEL<br>3ppmTWA<br>7.5mg/m³TWA | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Formaldehyde (impurity) | 0.3 ppm STEL<br>0.4 mg/m³ STEL | 2ppmSTEL<br>2.5mg/m³STEL<br>1ppmTWA<br>1.2mg/m³TWA | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling<br>Suspected Human Carcinogen<br>0.3 ppm TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Group 1 skin sensitizer |
| 2-aminoethanol (Impurity) | Not determined | 3 ppm TWA<br>Skin notation<br>6 ppm STEL | 3 ppm OEL<br>7.5 mg/m³ OEL |
| Formaldehyde (impurity) | 2 ppm STEL; 3 mg/m³ STEL<br>1.0 ppm TWA<br>1.5 mg/m³ TWA | 0.3 ppm STEL<br>0.3 mg/m³ STEL | Group 2 airway sensitizer<br>Group 1 skin sensitizer<br>0.1 ppm ACL<br>0.1 ppm OEL<br>0.12 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| 2-aminoethanol (Impurity) | 0.5 mg/m³ MAC | 15.0 mg/m³ STEL<br>6.0 ppm STEL | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Formaldehyde (impurity) | 0.5 mg/m³ MAC | 0.1 ppm STEL | 0.5 ppm TWA<br>0.33 ppm TWA<br>sensitiser<br>Confirmed carcinogen<br>1 ppm Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| 2-aminoethanol (Impurity) | 3 ppm TWA<br>7.5 mg/m³ TWA | 3 ppm TWA<br>6 mg/m³ TWA | Skin notation<br>0.5 mg/m³ MAC<br>Skin |
| Formaldehyde (impurity) | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling | Not determined | 0.5 mg/m³ MAC (vapor) |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| 2-aminoethanol (Impurity) | 3 ppm TWA | 8 mg/m³ TWA<br>15 mg/m³ STEL | 3 ppm STEL<br>7.6 mg/m³ STEL<br>Skin<br>1 ppm TWA<br>2.5 mg/m³ TWA |
| Formaldehyde (impurity) | 2 ppm STEL<br>0.75 ppm TWA | 0.5 mg/m³ TWA<br>1 mg/m³ STEL | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Local exhaust ventilation When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Impervious gloves made of: Nitrile Neoprene Butyl Rubber
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
Use respirator with organic vapor protection (A, brown) If there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 + Formaldehyde and P3 particulate pre-filter combination would be required.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Amine |
| **Color** | Colorless - Pale yellow |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 10.0 - 11.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 67 °C / 152.6 °F | ASTM D 93-11 |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | Not applicable | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | < -20°C / -4°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.05 - 1.15 g/ml @ 20°C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Contact with strong acids develops formaldehyde.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid frost.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin sensitisation (allergic reaction).

**Inhalation** Fatal if inhaled. Causes damage to organs through prolonged or repeated exposure.

**Eye contact** Causes serious eye irritation.

**Skin contact** Causes skin irritation. May cause an allergic skin reaction.

**Ingestion** Harmful if swallowed. May cause additional affects as listed under "Inhalation".

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | 1000 mg/kg (Rat) (BASF AG, 1997) | > 4000 mg/kg (Rat) (BASF AG,1997) | 0.371 mg/L (Aerosol) (Rat) (Triazine Taskforce, 2011) |
| 2-aminoethanol (Impurity) | = 1720 mg/kg ( Rat ) | = 1000 mg/kg ( Rabbit ) = 1 mL/kg ( Rabbit ) | No data available |
| Formaldehyde (impurity) | = 100 mg/kg ( Rat ) | = 270 mg/kg ( Rabbit ) | = 0.578 mg/L ( Rat ) 4 h |

| | |
|---|---|
| **Sensitization** | May cause allergic skin reaction. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | Formaldehyde is listed by IARC in Group 1 as carcinogenic to humans. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation (Aerosol). Skin contact. Eye contact. Ingestion. |
| **Routes of entry** | Inhalation. Skin contact. Ingestion. Eye contact. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Category 1. |
| **Target organ effects** | Respiratory system. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | > 168 mg/l LC50 96h Sheepshead Minnow (SLB data) | 1.624 mg/l EC50 72h Skeletonema (SLB data) | 99.68 mg/l KC50 48h Acartia (SLB data) |
| 2-aminoethanol (Impurity) | 114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h = 227 mg/L LC50 Pimephales promelas 96 h = 3684 mg/L LC50 Brachydanio rerio 96 h 300 - 1000 mg/L LC50 Lepomis macrochirus 96 h > 200 mg/L LC50 Oncorhynchus mykiss 96 h | = 15 mg/L EC50 Desmodesmus subspicatus 72 h | = 65 mg/L EC50 Daphnia magna 48 h |
| Formaldehyde (impurity) | 22.6 - 25.7 mg/L LC50 Pimephales promelas 96 h = 1510 µg/L LC50 Lepomis macrochirus 96 h = 41 mg/L LC50 Brachydanio rerio 96 h | No information available | 11.3 - 18 mg/L EC50 Daphnia magna 48 h = 2 mg/L LC50 Daphnia magna 48 h |

| | | | |
|---|---|---|---|
| | 0.032 - 0.226 mL/L LC50 Oncorhynchus mykiss 96 h 100 - 136 mg/L LC50 Oncorhynchus mykiss 96 h 23.2 - 29.7 mg/L LC50 Pimephales promelas 96 h | | |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Readily biodegradable |
| 2-aminoethanol (Impurity) | Readily biodegradable |
| Formaldehyde (impurity) | Rapidly biodegradable |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not likely to bioaccumulate log Kow <=3 |
| 2-aminoethanol (Impurity) | Product does not bioaccumulate due to reaction with water |
| Formaldehyde (impurity) | Does not bioaccumulate log Pow =0.35 |

## 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Soluble in water |
| Formaldehyde (impurity) | Miscible in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Study does not need to be conducted because the substance is readily biodegradable |
| 2-aminoethanol (Impurity) | Study does not need to be conducted because the substance is readily biodegradable |
| Formaldehyde (impurity) | Henry's Law Constant 0.034 (in Pa m³/mol) @ 25 °C |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN2810 |
| **UN No. (IMDG/ANTAQ)** | UN2810 |
| **UN No. (ICAO/ANAC)** | UN2810 |

**14.2. UN proper shipping name**
TOXIC LIQUID, ORGANIC, N.O.S. (Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine)

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 6.1 |
| **IMDG/ANTAQ Hazard class** | 6.1 |
| **ICAO/ANAC Hazard class/division** | 6.1 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | II |
| **IMDG/ANTAQ Packing group** | II |
| **ICAO/ANAC Packing group** | II |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 60 |
| **EmS (IMDG)** | F-A, S-A |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (D/E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-aminoethanol (Impurity)
Schedule 4
Schedule 6
Schedule 5
Formaldehyde (impurity)
Schedule 6

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR005127 |
| **Group number** | 6.1D, 6.1E, 6.5B, 6.4A, 6.9A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Feb-2018 |

| | |
|---|---|
| **Revision date** | 13-Mar-2019 |
| **Version** | 11 |
| **This SDS has been revised in the following section(s)** | 1, 2, 15, 16 There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood

**HMIS classification**

| | |
|---|---|
| Health | 3 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** PID16244
**Version** 5
**Revision date** 10-Jul-2018
**Supersedes Date:** 28-Jul-2016

# Safety Data Sheet
## SAFE-SCAV* HSB

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SCAV* HSB
**Product code** PID16244

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Hydrogen Sulphide Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Vapors) | Category 3 |
| Serious eye damage/eye irritation | Category 2 |
| Skin sensitization | Category 1 |
| Specific target organ toxicity - Repeated exposure | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H331 - Toxic if inhaled
H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P330 - Rinse mouth
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P311 - Call a POISON CENTER or doctor/physician
P314 - Get medical advice/attention if you feel unwell
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

**Contains**
Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine

Water

Formaldehyde (impurity)

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating and toxic gases and vapors

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | 225-208-0 | 4719-04-4 | 30-60 |
| Water | 231-791-2 | 7732-18-5 | 30-60 |
| Formaldehyde (impurity) | 200-001-8 | 50-00-0 | 0-0.1 |

**Comments**
Based on test data - (ATE inhalation: 0.7232 mg/l) H330 does not apply.

Formaldehyde is not present as a substance. It is formed during decomposition. Formaldehyde is listed by IARC in Group 1 as carcinogenic to humans

Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.
Note D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generallyplaced on the market in a stabilised form. It is in this form that they are listed in Part 3.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Never give anything by mouth to an unconscious person.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Formaldehyde.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Acids Keep at -5 - 40°C

**Storage class** Toxic storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Formaldehyde is not present as a substance. It is formed during decomposition. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Formaldehyde (impurity) | 0.3 ppm STEL<br>0.4 mg/m³ STEL | 2ppmSTEL<br>2.5mg/m³STEL<br>1ppmTWA<br>1.2mg/m³TWA | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling<br>Suspected Human Carcinogen<br>0.3 ppm TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Group 1 skin sensitizer |
| Water | Not determined | Not determined | Not determined |
| Formaldehyde (impurity) | 2 ppm STEL; 3 mg/m³ STEL<br>1.0 ppm TWA<br>1.5 mg/m³ TWA | 0.3 ppm STEL<br>0.3 mg/m³ STEL | Group 2 airway sensitizer<br>Group 1 skin sensitizer<br>0.1 ppm ACL<br>0.1 ppm OEL<br>0.12 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Formaldehyde (impurity) | 0.5 mg/m³ MAC | 0.1 ppm STEL | 0.5 ppm TWA<br>0.33 ppm TWA<br>sensitiser<br>Confirmed carcinogen<br>1 ppm Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| Water | Not determined | Not determined | Not determined |
| Formaldehyde (impurity) | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling | Not determined | 0.5 mg/m³ MAC (vapor) |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not determined | Not determined | Not determined |
| Water | Not determined | Not determined | Not determined |
| Formaldehyde (impurity) | 2 ppm STEL<br>0.75 ppm TWA | 0.5 mg/m³ TWA<br>1 mg/m³ STEL | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) If there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 + Formaldehyde and P2 particulate pre-filter combination would be required. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** Aqueous solution

| | |
|---|---|
| **Odor** | Amine |
| **Color** | Amber |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -20 °C / <-4 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 101 °C / > 213.8 °F | Closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.065 - 1.135 | @ 16°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | <10 cSt | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep at temperatures above -5 and < 40°C.

### 10.5 Incompatible materials

Strong oxidizing agents. Acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin sensitisation (allergic reaction).

**Inhalation** Toxic if inhaled. Causes damage to organs through prolonged or repeated exposure.

**Eye contact** Causes serious eye irritation.

**Skin contact** May cause an allergic skin reaction.

**Ingestion** Harmful if swallowed. May cause additional affects as listed under "Inhalation".

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | 1000 mg/kg (Rat) (BASF AG, 1997) | > 4000 mg/kg (Rat) (BASF AG,1997) | 0.371 mg/L (Aerosol) (Rat) (Triazine Taskforce, 2011) |
| Water | > 90 mL/kg ( Rat ) | No data available | No data available |
| Formaldehyde (impurity) | = 100 mg/kg ( Rat ) | = 270 mg/kg ( Rabbit ) | = 0.578 mg/L ( Rat ) 4 h |

**Sensitization** May cause sensitization by skin contact.

**Mutagenic effects** Contains an known or suspected mutagen.

**Carcinogenicity** Formaldehyde is listed by IARC in Group 1 as carcinogenic to humans.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Ingestion. Skin contact.

**Routes of entry** Inhalation. Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 1.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | > 168 mg/l LC50 96h Sheepshead Minnow (SLB data) | 1.624 mg/l EC50 72h Skeletonema (SLB data) | 99.68 mg/l KC50 48h Acartia (SLB data) |
| Water | No information available | No information available | No information available |
| Formaldehyde (impurity) | 22.6 - 25.7 mg/L LC50 Pimephales promelas 96 h = 1510 µg/L LC50 Lepomis macrochirus 96 h = 41 mg/L LC50 Brachydanio rerio 96 h 0.032 - 0.226 mL/L LC50 Oncorhynchus mykiss 96 h 100 - 136 mg/L LC50 Oncorhynchus mykiss 96 h 23.2 - 29.7 mg/L LC50 Pimephales promelas 96 h | No information available | 11.3 - 18 mg/L EC50 Daphnia magna 48 h = 2 mg/L LC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Readily biodegradable |
| Formaldehyde (impurity) | Rapidly biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Not likely to bioaccumulate log Kow <=3 |
| Formaldehyde (impurity) | Does not bioaccumulate log Pow =0.35 |

**log Pow**
-1.5 - 0.2

### 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Soluble in water |
| Formaldehyde (impurity) | Miscible in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine | Study does not need to be conducted because the substance is readily biodegradable |
| Formaldehyde (impurity) | Henry's Law Constant 0.034 (in Pa m³/mol) @ 25 °C |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN2810
**UN No. (IMDG/ANTAQ)** UN2810
**UN No. (ICAO/ANAC)** UN2810

### 14.2. UN proper shipping name

TOXIC LIQUID, ORGANIC, N.O.S. (2, 2', 2''-(hexahydro-1, 3, 5-triazine -1, 3, 5-triyl) triethanol)

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 6.1 |
| **IMDG/ANTAQ Hazard class** | 6.1 |
| **ICAO/ANAC Hazard class/division** | 6.1 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | II |
| **IMDG/ANTAQ Packing group** | II |
| **ICAO/ANAC Packing group** | II |


**14.5 Environmental hazard**

No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 60 |
| **EmS (IMDG)** | F-A, S-A |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (D/E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Formaldehyde (impurity)
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 28-Jul-2016 |
| **Revision date** | 10-Jul-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID11903
**Version** 3
**Revision date** 22-Dec-2020
**Supersedes Date:** 16-Mar-2016

# Safety Data Sheet
## SAFE-SCAV* HSW

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SCAV* HSW
**Product code** PID11903
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Hydrogen Sulphide Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 3 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Specific target organ toxicity - Single exposure | Category 2 |

| | |
|---|---|
| Specific target organ toxicity - Repeated exposure | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Flammable Liquids | Category 3 |

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H371 - May cause damage to organs
H372 - Causes damage to organs through prolonged or repeated exposure
H226 - Flammable liquid and vapor

**Precautionary statements**
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

**Supplementary precautionary statements**
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P403 + P235 - Store in a well-ventilated place. Keep cool
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol

Methanol

2-aminoethanol

Formaldehyde (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | 225-208-0 | 4719-04-4 | 30-60 |
| Methanol | 200-659-6 | 67-56-1 | 5-10 |
| 2-aminoethanol | 205-483-3 | 141-43-5 | 1-5 |
| Formaldehyde (impurity) | 200-001-8 | 50-00-0 | <1 |

**Comments**
Formaldehyde is not present as a substance. It is formed during decomposition.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. Seek medical attention at once.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention at once.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Seek immediate medical attention/advice.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire, Do not use halon type extinguisher.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
FLAMMABLE. Vapors are heavier than air and may spread along floors. Vapors may travel considerable distance to source of ignition and flash back.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Formaldehyde.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** •3W

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Dike to collect large liquid spills. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Take precautionary measures against static discharges. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Ground and bond containers when transferring material. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Prevent the formation of vapors, mists and aerosols. Avoid spills and splashing during use. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

**Storage class** Flammable liquid storage. Toxic storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Formaldehyde is not present as a substance. It is formed during decomposition.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA | 250ppmSTEL<br>328mg/m³STEL<br>200ppmTWA<br>262mg/m³TWA | 250 ppm STEL<br>325 mg/m³ STEL<br>Skin designation<br>200 ppm TWA<br>260 mg/m³ TWA |

| | | | |
|---|---|---|---|
| 2-aminoethanol | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA | 6ppmSTEL<br>15mg/m³STEL<br>3ppmTWA<br>7.5mg/m³TWA | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Formaldehyde (impurity) | 0.3 ppm STEL<br>0.4 mg/m³ STEL | 2ppmSTEL<br>2.5mg/m³STEL<br>1ppmTWA<br>1.2mg/m³TWA | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling<br>Suspected Human Carcinogen<br>0.3 ppm TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Group 1 skin sensitizer |
| Methanol | 250 ppm STEL<br>310 mg/m³ STEL<br>200 ppm TWA<br>260 mg/m³ TWA | 200 ppm TWA<br>250 ppm STEL | May cause substantial skin absorption<br>200 ppm ACL<br>200 ppm OEL<br>260 mg/m³ OEL |
| 2-aminoethanol | Not determined | 3 ppm TWA<br>Skin notation<br>6 ppm STEL | 3 ppm OEL<br>7.5 mg/m³ OEL |
| Formaldehyde (impurity) | 2 ppm STEL<br>3 mg/m³ STEL<br>1.0 ppm TWA<br>1.5 mg/m³ TWA | 0.3 ppm STEL<br>0.3 mg/m³ STEL | 0.2 ppm Ceiling<br>0.24 mg/m³ Ceiling<br>Group 2 airway sensitizer<br>Group 1 skin sensitizer<br>0.1 ppm ACL<br>0.1 ppm OEL<br>0.12 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol | 5 mg/m³ MAC | 260 mg/m³ TWA<br>200 ppm TWA<br>Skin notation<br>325 mg/m³ STEL<br>250 ppm STEL | 250 ppm STEL<br>328 mg/m³ STEL<br>200 ppm TWA<br>262 mg/m³ TWA<br>Possibility of significant uptake through the skin |
| 2-aminoethanol | 0.5 mg/m³ MAC | 8.0 mg/m³ TWA<br>3.0 ppm TWA<br>15.0 mg/m³ STEL<br>6.0 ppm STEL | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Formaldehyde (impurity) | 0.5 mg/m³ MAC | 0.016 ppm TWA<br>0.1 ppm STEL | 0.5 ppm TWA<br>0.33 ppm TWA<br>sensitiser<br>Confirmed carcinogen<br>1 ppm Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol | 200 ppm TWA<br>262 mg/m³ TWA<br>Skin notation | 200 ppm TWA<br>260 mg/m³ TWA | 15 mg/m³ STEL<br>Skin notation<br>5 mg/m³ TWA<br>Skin |
| 2-aminoethanol | 3 ppm TWA<br>7.5 mg/m³ TWA | 3 ppm TWA<br>6 mg/m³ TWA | 0.5 mg/m³ MAC<br>Skin |
| Formaldehyde (impurity) | 0.3 ppm Ceiling<br>0.37 mg/m³ Ceiling | Not determined | 0.5 mg/m³ MAC (vapor) |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not determined | Not determined | Not determined |
| Methanol | Not determined | 50 mg/m³ TWA<br>100 mg/m³ STEL | Skin<br>200 ppm TWA<br>260 mg/m³ TWA |
| 2-aminoethanol | 3 ppm TWA | 8 mg/m³ TWA<br>15 mg/m³ STEL | 3 ppm STEL<br>7.6 mg/m³ STEL<br>Skin<br>1 ppm TWA |

| | | | |
|---|---|---|---|
| | | | 2.5 mg/m³ TWA |
| Formaldehyde (impurity) | 2 ppm STEL<br>0.75 ppm TWA | 0.5 mg/m³ TWA<br>1 mg/m³ STEL | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Use protective gloves made of: Nitrile Neoprene Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) If there are conditions in which this triazine containing product produces a vapor, a chemical respirator with A1 + Formaldehyde and P2 particulate pre-filter combination would be required. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Amine |
| **Color** | Pale yellow - Straw |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 10 - 11.5 | (5% IPA/H20) |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 52 °C / 125.6 °F | Closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 63.7 mmHg | @ 37.8 °C |
| **Vapor density** | >1 | (Air = 1.0) |
| **Specific gravity** | 1.074 | @ 16 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 14-16 cPs | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -37°C (-34.6°F) |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

FLAMMABLE LIQUID AND VAPOR. Contact with strong acids develops formaldehyde.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition.

**10.5 Incompatible materials**

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product may contain or release trace amounts of formaldehyde. The International Agency for Research on Cancer (IARC) has classified formaldehyde as a Group 1carcinogen (limited evidence in humans, sufficient evidence in animals). Exposure to formaldehyde has been linked to adverse reproductive effects in some human and animal studies. In other reproductive studies, however, no adverse effects were noted. (Meditext). Formaldehyde may also cause skin sensitisation (allergic reaction).

**Inhalation** Toxic if inhaled. Causes damage to organs through prolonged or repeated exposure.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. May cause an allergic skin reaction. Components of the product may be absorbed into the body through the skin.

**Ingestion** Harmful if swallowed.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2,2',2"-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | 1000 mg/kg (Rat) (BASF AG, 1997) | > 4000 mg/kg (Rat) (BASF AG,1997) | 0.371 mg/L (Aerosol) (Rat) (Triazine Taskforce, 2011) |
| Methanol | = 6200 mg/kg ( Rat ) | = 15840 mg/kg ( Rabbit ) = 15800 mg/kg ( Rabbit ) | = 22500 ppm ( Rat ) 8 h = 64000 ppm ( Rat ) 4 h |
| 2-aminoethanol | = 1720 mg/kg (Rat) | = 1000 mg/kg (Rabbit) = 1 mL/kg (Rabbit) | > 1.3 mg/l Vapour 6h (Rat) |
| Formaldehyde (impurity) | = 100 mg/kg ( Rat ) | = 270 mg/kg ( Rabbit ) | = 0.578 mg/L ( Rat ) 4 h |

**Sensitization** May cause sensitization by skin contact.

**Mutagenic effects** This substance has no evidence of mutagenic properties.

**Carcinogenicity** Formaldehyde is listed by IARC in Group 1 as carcinogenic to humans.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Ingestion. Skin contact. Eye contact.

**Routes of entry** Inhalation. Ingestion. Skin absorption.

**Specific target organ toxicity - Single exposure** Category 2

**Specific target organ toxicity - Repeated exposure** Category 1.

**Target organ effects** Respiratory system.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2,2',2''-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | > 168 mg/l LC50 96h Sheepshead Minnow (SLB data) | 1.624 mg/l EC50 72h Skeletonema (SLB data) | 99.68 mg/l KC50 48h Acartia (SLB data) |
| Methanol | 13500 - 17600 mg/L LC50 Lepomis macrochirus 96 h 18 - 20 mL/L LC50 Oncorhynchus mykiss 96 h 19500 - 20700 mg/L LC50 Oncorhynchus mykiss 96 h > 100 mg/L LC50 Pimephales promelas 96 h = 28200 mg/L LC50 Pimephales promelas 96 h | EC50= 22000 mg/l - Duration h: 96 - Notes: Literature data. | EC50> 10000 mg/l - Duration h: 48 - Notes: Literature data. |
| 2-aminoethanol | > 200 mg/L LC50 Oncorhynchus mykiss 96 h = 3684 mg/L LC50 Brachydanio rerio 96 h 300 - 1000 mg/L LC50 Lepomis macrochirus 96 h 114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h = 227 mg/L LC50 Pimephales promelas 96 h | = 15 mg/L EC50 Desmodesmus subspicatus 72 h | = 65 mg/L EC50 Daphnia magna 48 h |
| Formaldehyde (impurity) | 23.2 - 29.7 mg/L LC50 Pimephales promelas 96 h 100 - 136 mg/L LC50 Oncorhynchus mykiss 96 h 0.032 - 0.226 mL/L LC50 Oncorhynchus mykiss 96 h = 41 mg/L LC50 Brachydanio rerio 96 h = 1510 µg/L LC50 Lepomis macrochirus 96 h 22.6 - 25.7 mg/L LC50 Pimephales promelas 96 h | No information available | 11.3 - 18 mg/L EC50 Daphnia magna 48 h = 2 mg/L LC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2,2',2"-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Readily biodegradable |
| 2-aminoethanol | Readily biodegradable |
| Formaldehyde (impurity) | Rapidly biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2,2',2"-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Not likely to bioaccumulate log Kow <=3 |
| 2-aminoethanol | Does not bioaccumulate log Kow -1.91 |
| Formaldehyde (impurity) | Does not bioaccumulate log Pow =0.35 |

**log Pow**
-1.5 - 0.2

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| 2,2',2"-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Soluble in water |
| Formaldehyde (impurity) | Miscible in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| 2,2',2"-(Hexahydro-1,3,5-triazin-1,3,5-triyl)triethanol | Study does not need to be conducted because the substance is readily biodegradable |
| Formaldehyde (impurity) | Henry's Law Constant 0.034 (in Pa m³/mol) @ 25 °C |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Do not burn, or use a cutting torch on, the empty drum. Empty containers may contain flammable or explosive vapors. Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

.

.

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN2929 |
| **UN No. (IMDG/ANTAQ)** | UN2929 |
| **UN No. (ICAO/ANAC)** | UN2929 |

**14.2. UN proper shipping name**

Toxic liquids, flammable, organic, n.o.s., (2, 2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol, methyl alcohol),

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 6.1 (3) |
| **IMDG/ANTAQ Hazard class** | 6.1 (3) |
| **ICAO/ANAC Hazard class/division** | 6.1 (3) |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | PG II |
| **IMDG/ANTAQ Packing group** | PG II |
| **ICAO/ANAC Packing group** | PG II |


**14.5 Environmental hazard**

No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 63 |
| **EmS (IMDG)** | F-E, S-D |
| **Emergency Action Code (EAC)** | •3W |
| **Tunnel restriction code** | (D/E) |
| **Hazchem code ADG** | •3W |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Methanol
Schedule 6
Schedule 5
2-aminoethanol
Schedule 4
Schedule 6
Schedule 5
Formaldehyde (impurity)
Schedule 6

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 16-Mar-2016 |
| **Revision date** | 22-Dec-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 3* |
| Flammability | 2 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1392
**Version** 11
**Revision date** 14-Mar-2019
**Supersedes Date:** 09-Jul-2018

# Safety Data Sheet
## SAFE-SCAV* NA

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SCAV* NA
**Product code** PID1392

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Oxygen Scavenger.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Water

Ammonium hydrogensulfite

Sulphur Dioxide (Impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Water | 231-791-2 | 7732-18-5 | 30-60 |
| Ammonium hydrogensulfite | 233-469-7 | 10192-30-0 | 30-60 |
| Sulphur Dioxide (Impurity) | 231-195-2 | 7446-09-5 | <1 |

**Comments**
Sulfur dioxide is not present as a substance. It is formed during decomposition.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Heating or fire can release toxic gas Sulphur oxides, Nitrogen oxides (NOx), Oxides of:, Ammonia, Amines.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**

Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
This product slowly releases sulphur dioxide in contact with air. Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Acids Alkalis Keep at 5-30°C |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | Exposure limit noted is for decomposition product Sulfur dioxide.<br>No biological limit allocated |

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA | 5ppmSTEL<br>13mg/m³STEL<br>2ppmTWA<br>5.2mg/m³TWA | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm STEL; 10 mg/m³ STEL<br>2 ppm TWA<br>5 mg/m³ TWA | 0.25 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 10 mg/m³ MAC | 13.0 mg/m³ STEL<br>5.0 ppm STEL | 5 ppm STEL<br>13 mg/m³ STEL<br>2 ppm TWA<br>5.2 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 2 ppm TWA<br>5.2 mg/m³ TWA | 5 ppm TWA<br>13 mg/m³ TWA | Skin notation<br>10 mg/m³ MAC<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Water | Not determined | Not determined | Not determined |
| Ammonium hydrogensulfite | Not determined | Not determined | Not determined |
| Sulphur Dioxide (Impurity) | 5 ppm TWA | 5 mg/m³ TWA<br>10 mg/m³ STEL | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Chemical respirator with ammonia and amines cartridge (K/P2, green filter). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing

before re-use

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Pungent Sulfur |
| **Color** | Straw - Yellow |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 4.9 - 5-5 | 1% solution |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | 105 °C / 221 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 18 mmHg | @ 20 °C |
| **Vapor density** | <1 | (Air = 1.0) |
| **Specific gravity** | 1.3 | |
| **Bulk density** | No information available | |
| **Relative density** | 1.27 - 1.39 | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Reacts violently with oxidizers. Liberates poisonous sulfur dioxide gas on contact with acid.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Keep at temperatures between 5-30°C.

### 10.5 Incompatible materials

Strong oxidizing agents. Acids. Alkalis.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Product information** | Bisulfites may cause skin sensitization in sulfite sensitive persons. Bisulfites may also cause respiratory sensitization in asthmatics and sulfite sensitive persons. |
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Causes serious eye irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Water | > 90 mL/kg ( Rat ) | No data available | No data available |
| Ammonium hydrogensulfite | LD50= 2746 mg/kg - source: By analogy to product with similar composition. Notes: Related to male<br>LD50> 2150 mg/kg By analogy to product with similar composition. | LD50> 2000 mg/kg - Duration: 24h. Source: By analogy to product with similar composition | LC50 > 5.5 mg/l - Duration: 4h. Source: By analogy to product with similar composition. |

| | | | |
|---|---|---|---|
| | Notes: Related to female | | |
| Sulphur Dioxide (Impurity) | No data available | No data available | = 2500 ppm ( Rat ) 1 h |

**Sensitization** Repeated or prolonged contact may cause allergic reactions in very susceptible persons.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact. Inhalation.

**Routes of entry** Eye contact. Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Water | No information available | No information available | No information available |
| Ammonium hydrogensulfite | OECD 203 Fish LC50 > 464 mg/l - Duration h: 96 - Notes: By analogy to product with similar composition | Algae EC50 = 43.8 mg/l - Duration h: 72 - Notes: By analogy to product with similar composition. | Daphnia magna EC50 = 89 mg/l - Duration h: 48 - Notes: By analogy to product with similar composition |
| Sulphur Dioxide (Impurity) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|

| | |
|---|---|
| Ammonium hydrogensulfite | Not applicable |

**12.3 Bioaccumulative potential**

Not Applicable - Inorganic chemical. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Ammonium hydrogensulfite | No data available |

**12.4 Mobility**

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Ammonium hydrogensulfite | No data available |

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002503 |
| **Group number** | 6.4A |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |

| | |
|---|---|
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 09-Jul-2018 |
| **Revision date** | 14-Mar-2019 |
| **Version** | 11 |
| **This SDS has been revised in the following section(s)** | 1, 2, 3, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12078
**Version** 7
**Revision date** 13-Sep-2019
**Supersedes Date:** 10-Jun-2015

# Safety Data Sheet
## SAFE-SOLV* E

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SOLV* E
**Product code** PID12078

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Solvent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Aspiration toxicity | Category 1 |
| Skin corrosion/irritation | Category 2 |
| Skin sensitization | Category 1 |

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P331 - Do NOT induce vomiting
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics*

Orange, sweet, extract

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Vapors may form explosive mixtures with air

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | 926-141-6 | RM1004884 | 60-100 |
| Orange, sweet, extract | 232-433-8 | 8028-48-6 | 10-30 |

**Comments**
Terpenes and Terpenoids, sweet orange oil can also use CAS 68647-72-3.

*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing has stopped, begin artificial respiration. Seek medical attention at once.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. If vomiting occurs spontaneously, minimize the risk of aspiration by properly positioning the affected person. Never give anything by mouth to an unconscious person. Seek medical attention.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**

Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Vapors may form explosive mixture with air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. Persons susceptible to allergic reactions should not handle this product.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Oil mist (mineral) workplace exposure limits are currently under review by legislative authorities. This workplace exposure limit (WEL) standard is applicable to highly refined mineral oils and is provided as a guidance limit only LT. EXP = 5mg/m$^3$ and ST. EXP = 10mg/m$^3$.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Orange, sweet, extract | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Orange, sweet, extract | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Orange, sweet, extract | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Orange, sweet, extract | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Orange, sweet, extract | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene

| | |
|---|---|
| | Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of inadequate ventilation wear respiratory protection Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Sweet |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -20 °C / -4 °F | |
| **Boiling point/range** | 173 °C / 343.4 °F | |
| **Flash point** | 65 °C / 149 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | 5 | |
| **Lower flammability limit** | 0.7 | |
| **Vapor pressure** | ~2 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.81 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | Soluble organic solvents | |
| **Autoignition temperature** | 230 °C / 446 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | <20.5 mm2/s | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Vapours may form explosive mixtures with air |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Vapours may form explosive mixtures with air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Not known.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. May cause additional affects as listed under "Ingestion". |
| **Eye contact** | May cause irritation. |
| **Skin contact** | Causes skin irritation. May cause an allergic skin reaction. Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | May be fatal if swallowed and enters airways. Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis. |
| **Unknown acute toxicity** | Not applicable. |

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | >5000 mg/kg (Rat) | No data available | >5000 mg/m³ (Rat, 8h)<br>>5000 mg/kg (Rabbit) |
| Orange, sweet, extract | No data available | No data available | No data available |

**Sensitization** May cause allergic skin reaction.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Ingestion. Skin contact. Inhalation.

**Routes of entry** Inhalation. Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available | 1000 mg/l (Oncorhynchus mykiss, 96h | 1000 mg/l (Daphnia magna), 48h |
| Orange, sweet, extract | > 1000 mg/l (Scophthalmus Maximus), 96h | No information available | 451 mg/l (Acartia Tonsa), 48h |

### 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|

| | |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Readily biodegradable |

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR002649 |
| **Group number** | 6.1E, 6.3A, 6.5B, 9.1D |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**
**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

CAS Number 64742-47-8 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 10-Jun-2015 |
| **Revision date** | 13-Sep-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2* |
| Flammability | 2 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate**

**agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1405
**Version** 8
**Revision date** 06-Feb-2019
**Supersedes Date:** 22-Jul-2015

# Safety Data Sheet
## SAFE-SURF* E

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SURF* E
**Product code** PID1405

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Displacement Chemical

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Alcohols, C6-12, ethoxylated

Ethoxylated monoethanolamide of fatty acids of coconut oil

2-butoxyethanol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Alcohols, C6-12, ethoxylated | Polymer | 68439-45-2 | 5-10 |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | 612-392-6 | 61791-08-0 | 5-10 |
| 2-butoxyethanol | 203-905-0 | 111-76-2 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Store above freezing temperature Avoid contact with: Strong acids Strong bases Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Alcohols, C6-12, ethoxylated | Not determined | Not determined | Not determined |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | Not determined | Not determined | Not determined |
| 2-butoxyethanol | 25 ppm TWA<br>121 mg/m³ TWA | 50ppmSTEL<br>242mg/m³STEL<br>20ppmTWA<br>96.9mg/m³TWA | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Alcohols, C6-12, ethoxylated | Not determined | Not determined | Not determined |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | Not determined | Not determined | Not determined |
| 2-butoxyethanol | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Skin notation | 25 ppm ACL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Alcohols, C6-12, ethoxylated | Not determined | Not determined | Not determined |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | Not determined | Not determined | Not determined |
| 2-butoxyethanol | 5 mg/m³ MAC | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Possibility of significant uptake through the skin*1) |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Alcohols, C6-12, ethoxylated | Not determined | Not determined | Not determined |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | Not determined | Not determined | Not determined |
| 2-butoxyethanol | 20 ppm TWA<br>96.7 mg/m³ TWA<br>Skin notation*3) | skin - potential for cutaneous absorption<br>50 ppm TWA<br>240 mg/m³ TWA | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Alcohols, C6-12, ethoxylated | Not determined | Not determined | Not determined |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | Not determined | Not determined | Not determined |
| 2-butoxyethanol | 50 ppm TWA | Not determined | 50 ppm STEL<br>246 mg/m³ STEL<br>Skin*2)<br>20 ppm TWA<br>98 mg/m³ TWA |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in

| | |
|---|---|
| **Skin and body protection** | confined or poorly ventilated spaces, respiratory protection with air supply must be used. Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Slight |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 8.0 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | > 93 °C / > 199.4 °F | |
| **Evaporation rate (BuAc =1)** | negligible | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.0 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | <2 | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |

**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Store above freezing temperature.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids. Strong bases.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Alcohols, C6-12, ethoxylated | 1200 mg/kg - Litterature data (rat) | 2000 mg/kg (rat)(based on components) | No data available |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | > 2000 mg/kg (Rat) | No data available | No data available |
| 2-butoxyethanol | 1200 mg/kg (Guinea pigs) | > 2000 mg/kg (Rat) | 400 ppm ( Rabbit) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Eye contact. Skin contact. |
| **Routes of entry** | Skin absorption. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Alcohols, C6-12, ethoxylated | No information available | No information available | No information available |
| Ethoxylated monoethanolamide of fatty acids of coconut oil | No information available | No information available | No information available |
| 2-butoxyethanol | = 2950 mg/L LC50 Lepomis macrochirus 96 h = 1490 mg/L LC50 Lepomis macrochirus 96 h | No information available | = 1698 - 1940 mg/L (LC50; Daphnia magna) = 1720 mg/L (EC50; water flea) |

### 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-butoxyethanol | Readily biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2-butoxyethanol | Not likely to bioaccumulate |

**log Pow**
<2

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| 2-butoxyethanol | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| 2-butoxyethanol | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-butoxyethanol
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |

| | |
|---|---|
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 22-Jul-2015 |
| **Revision date** | 06-Feb-2019 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID20170
**Version** 2
**Revision date** 09-Aug-2018
**Supersedes Date:** 08-Jul-2016

# Safety Data Sheet
## SAFE-SURF* EU

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SURF* EU
**Product code** PID20170

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Completion fluid additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Acute toxicity - Dermal | Category 4 |
| Acute toxicity - Inhalation (Dusts/Mists) | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage
H332 - Harmful if inhaled

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P310 - Immediately call a POISON CENTER or doctor/physician
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
2-butoxyethanol

D-Glucopyranose, oligomeric, C8-10 glycosides

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating and toxic gases and vapors

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

# 3. Composition/information on Ingredients

## 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Water | 231-791-2 | 7732-18-5 | 30-60 |
| 2-butoxyethanol | 203-905-0 | 111-76-2 | 30-60 |
| D-Glucopyranose, oligomeric, C8-10 glycosides | 500-220-1 | 68515-73-1 | 5-10 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move to fresh air. Keep at rest. If breathing is difficult, (trained personnel should) give oxygen. Seek immediate medical attention/advice.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Seek medical attention at once.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**

None known.

**5.2. Special hazards arising from the substance or mixture**

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2-butoxyethanol | 25 ppm TWA<br>121 mg/m³ TWA | 50ppmSTEL<br>242mg/m³STEL<br>20ppmTWA<br>96.9mg/m³TWA | Not determined |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2-butoxyethanol | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Skin notation | 25 ppm ACL |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2-butoxyethanol | 5 mg/m³ MAC | Not determined | 25 ppm TWA<br>121 mg/m³ TWA<br>Possibility of significant uptake through the skin*1) |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2-butoxyethanol | 20 ppm TWA<br>96.7 mg/m³ TWA<br>Skin notation*3) | skin - potential for cutaneous absorption<br>50 ppm TWA<br>240 mg/m³ TWA | 5 mg/m³ MAC |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2-butoxyethanol | 50 ppm TWA | Not determined | 50 ppm STEL<br>246 mg/m³ STEL<br>Skin*2)<br>20 ppm TWA<br>98 mg/m³ TWA |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Butyl<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | Sweet |
| **Color** | Colorless - Light orange |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 3.2 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | ~ 16 mmHg | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 0.99 s.g | @ 20°C. |
| **Water solubility** | Soluble in water | |

| | |
|---|---|
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Not known.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Harmful by inhalation. Inhalation of vapors in high concentration may cause shortness of breath (lung edema). |
| **Eye contact** | Causes serious eye damage. |
| **Skin contact** | Causes skin irritation. Components of the product may be absorbed into the body through the skin. |

**Ingestion** Harmful if swallowed.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2-butoxyethanol | 1200 mg/kg (Guinea pigs) | > 2000 mg/kg (Rat) | 400 ppm ( Rabbit) |
| D-Glucopyranose, oligomeric, C8-10 glycosides | > 2000 mg/kg bw (Rat) ECHA Data | > 2000 mg/kg (Rabbit) ECHA Data | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Eye contact. Skin contact. Ingestion.

**Routes of entry** Inhalation. Eye contact. Skin contact. Ingestion.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2-butoxyethanol | = 2950 mg/L LC50 Lepomis | No information available | = 1698 - 1940 mg/L (LC50; Daphnia |

| | | | |
|---|---|---|---|
| | macrochirus 96 h = 1490 mg/L LC50 Lepomis macrochirus 96 h | | magna) = 1720 mg/L (EC50; water flea) |
| D-Glucopyranose, oligomeric, C8-10 glycosides | 170 mg/l LC50 Zebra fish | 37 mg/L (= 21 mg a.i./L) EC50 to the freshwater algae Scenedesmus subspicatus 72h | > 100 mg/l EC50 Daphnia magna 48h |

## 12.2 Persistence and degradability

Readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2-butoxyethanol | Readily biodegradable |
| D-Glucopyranose, oligomeric, C8-10 glycosides | OECD 301 Readily biodegradable |

## 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| 2-butoxyethanol | Not likely to bioaccumulate |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not likely to bioaccumulate |

## 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| 2-butoxyethanol | Soluble in water |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Partially soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| 2-butoxyethanol | No information available |
| D-Glucopyranose, oligomeric, C8-10 glycosides | No information available |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

## 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-butoxyethanol
Schedule 6

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 08-Jul-2016 |
| **Revision date** | 09-Aug-2018 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 1, 2, 3, 8, 11, 12, 15, 16 Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID1410
**Version** 9
**Revision date** 19-Mar-2019
**Supersedes Date:** 11-Feb-2019

# Safety Data Sheet
## SAFE-SURF* WN

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-SURF* WN
**Product code** PID1410

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Cleaning agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
D-Glucopyranose, oligomeric, C8-10 glycosides

Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)*

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2-(2-hydroxyethoxy)ethan-1-ol | 203-872-2 | 111-46-6 | 10 - < 20 |
| D-Glucopyranose, oligomeric, C8-10 glycosides | 500-220-1 | 68515-73-1 | 5 - < 15 |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | 940-678-3 | RM1003733 | 5 - < 15 |

**Comments**
Based on test data - Eye Irritation (OECD 405), this product is not irritant.

*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of this SDS.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Store at room temperature Avoid frost.

**Storage class** Chemical storage.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| Sulfonation products of disodium | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | | | |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not determined | Not determined | Not determined |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | Not determined | Not determined | Not determined |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before breaks and immediately after handling the product

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Slight |
| **Color** | Colorless - Pale yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Approx. 5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | ~ 100 °C / 212 °F | |
| **Flash point** | > 110 °C / > 230 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.04 | 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | ~ 300 cP | @ 20 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | < 0°C / 32°F |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Store at room temperature. Do not freeze.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**LD50 Oral** > 2000 mg/kg (rat) Calculated (MIXTURE)

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | > 2000 mg/kg bw (Rat) ECHA Data | > 2000 mg/kg (Rabbit) ECHA Data | No data available |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | 170 mg/l LC50 Zebra fish | 37 mg/L (= 21 mg a.i./L) EC50 to the freshwater algae Scenedesmus subspicatus 72h | > 100 mg/l EC50 Daphnia magna 48h |
| Sulfonation products of disodium sulfite with (esterification products of C10-16 (even numbered) alkyl polyglycosides with maleic anhydride)* | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Readily biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | OECD 301 Readily biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | Not likely to bioaccumulate |

### 12.4 Mobility

**Mobility**
Soluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | Partially soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| D-Glucopyranose, oligomeric, C8-10 glycosides | No information available |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated

**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

CAS Number 151911-53-4 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 11-Feb-2019 |
| **Revision date** | 19-Mar-2019 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | 1, 2, 3, 8, 11, 12, 15, 16 There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1413
**Version** 2
**Revision date** 14-Mar-2017
**Supersedes Date:** 03-Sep-2014

# Safety Data Sheet
## SAFE-VIS* E

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-VIS* E
**Product code** PID1413

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Completion fluid additive. Viscosifier.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Tetradec-1-ene

**2.3 Other hazards**

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Tetradec-1-ene | 214-306-9 | 1120-36-1 | 30-60 |

**Comments**
The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash contaminated clothing before re-use. Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to

hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Tetradec-1-ene | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Tetradec-1-ene | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Tetradec-1-ene | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Tetradec-1-ene | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Tetradec-1-ene | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical

hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene<br>Break through time >480 minutes<br>Glove thickness =>0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Very viscous |
| **Odor** | Mild |
| **Color** | Tan - White |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -20 °C / -4 °F | |
| **Boiling point/range** | 115.6 °C / 240.0 °F | |
| **Flash point** | > 107.2 °C / > 225.0 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.96 | 15.6 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |

| | | |
|---|---|---|
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | > 20.5 mm2/s | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents. Strong acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Tetradec-1-ene | > 10000 mg/kg ( Rat ) | > 10000 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Inhalation. Skin contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** The viscosity of this product is high enough that it is not an aspiration risk and the H304 phrase does not apply.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Tetradec-1-ene | = 0.39 mg/L LC50 Oncorhynchus mykiss 96 h = 1.06 mg/L LC50 Pimephales promelas 96 h 1 - 3.2 mg/L LC50 Brachydanio rerio 96 h | 22 - 24 mg/L EC50 Pseudokirchneriella subcapitata 96 h | = 0.74 mg/L EC50 Daphnia magna 48 h = 0.68 mg/L LC50 Daphnia magna 96 h |

| | | | |
|---|---|---|---|
| | 10.0 - 32.0 mg/L LC50 Poecilia reticulata 96 h | | |

**12.2 Persistence and degradability**

No product level data available.

**12.3 Bioaccumulative potential**

No product level data available.

**12.4 Mobility**

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Sep-2014 |
| **Revision date** | 14-Mar-2017 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | X |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1415
**Version** 4
**Revision date** 06-Sep-2019
**Supersedes Date:** 25-Sep-2015

# Safety Data Sheet
## SAFE-VIS* HDE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAFE-VIS* HDE
**Product code** PID1415
**Country Limitations** This SDS is not for use in EU/EEA.

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Viscosifier. Completion fluid additive.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Acute toxicity - Oral | Category 4 |
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P270 - Do not eat, drink or smoke when using this product
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P314 - Get medical advice/attention if you feel unwell
P330 - Rinse mouth
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling

**Contains**
Ethylene Glycol

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Ethylene Glycol | 203-473-3 | 107-21-1 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if irritation occurs.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Environmental exposure controls**
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Ethylene Glycol | Not determined | 40ppmSTELvapour | 39.4 ppm Ceiling |

| | | | |
|---|---|---|---|
| | | 104mg/m³STELvapour<br>10mg/m³TWAparticulate<br>20ppmTWAvapour<br>52mg/m³TWAvapour | 100 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Ethylene Glycol | Not determined | 100 mg/m³ STEL | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Ethylene Glycol | 5 mg/m³ MAC | 125 mg/m³ TWA<br>50.0 ppm TWA<br>100 mg/m³ STEL | 50 ppm Ceiling mist and vapour<br>127 mg/m³ Ceiling mist and vapour |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Ethylene Glycol | 39.4 ppm Ceiling aerosol<br>100 mg/m³ Ceiling aerosol | Not determined | 10 mg/m³ STEL<br>5 mg/m³ TWA |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Ethylene Glycol | Not determined | 10 mg/m³ TWA<br>60 mg/m³ TWA<br>20 mg/m³ STEL<br>125 mg/m³ STEL | 40 ppm STEL<br>104 mg/m³ STEL<br>Skin<br>20 ppm TWA<br>52 mg/m³ TWA |

## 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile Butyl
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 134 °C / 273 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | < 0.05 | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.88 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Dispersible | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**

Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

None known.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system. May cause additional affects as listed under "Ingestion".

**Eye contact** May cause eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation. May be absorbed through the skin in harmful amounts.

**Ingestion** Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ethylene Glycol | = 7712 mg/kg (Rat)<br>ECHA Data | > 3500 mg/kg (Mouse)<br>ECHA Data | > 2.5 mg/l (Rat) 6 hour<br>ECHA Data |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Ingestion. Skin contact.

**Routes of entry** Skin absorption.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Kidney.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Ethylene Glycol | 40000 - 60000 mg/L LC50 (Pimephales promelas) = 96 h<br><br>40761 mg/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>27540 mg/L LC50 (Lepomis macrochirus) = 96 h<br><br>14 - 18 mL/L LC50 (Oncorhynchus mykiss) = 96 h<br><br>16000 mg/L LC50 (Poecilia reticulata) = 96 h<br><br>41000 mg/L LC50 (Oncorhynchus mykiss) = 96 h | 6500 - 13000 mg/L EC50 (Pseudokirchneriella subcapitata) = 96 h | 46300 mg/L EC50 (Daphnia magna) = 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Ethylene Glycol | Readily biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Ethylene Glycol | log Pow -1.36(Calculated) Not likely to bioaccumulate |

### 12.4 Mobility

**Mobility**
Dispersible in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Ethylene Glycol | Completely soluble |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Ethylene Glycol | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated

**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Ethylene Glycol
Schedule 6
Schedule 5

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in EU/EEA.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 25-Sep-2015 |
| **Revision date** | 06-Sep-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | J |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1436
**Version** 2
**Revision date** 06-Jul-2017
**Supersedes Date:** 11-Jun-2014

# Safety Data Sheet
## SAPP

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SAPP
**Product code** PID1436

Molecular weight 222.15

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** SAPP dispersant. Thinner.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Disodium dihydrogen diphosphate

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Disodium dihydrogen diphosphate | 231-835-0 | 7758-16-9 | 60-100 |

### 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Oxides of phosphorus.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid excessive heat for prolonged periods of time. Protect from moisture Avoid contact with: Strong alkalies.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Disodium dihydrogen diphosphate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Disodium dihydrogen diphosphate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Disodium dihydrogen diphosphate | Not determined | Not determined | Not determined |

| Chemical Name | Malaysia | Philippines | Russia |
|---|---|---|---|
| Disodium dihydrogen diphosphate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Disodium dihydrogen diphosphate | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Crystalline Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 4.0 - 5.0 | @ 10 g/l |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |

| | | |
|---|---|---|
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.8 - 1.9 sg | 20 °C |
| **Bulk density** | 1000-1200 kg/m³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 222.15 |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Protect from moisture. Avoid excessive heat for prolonged periods of time.

**10.5 Incompatible materials**

Strong alkalies.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged skin contact may cause skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Disodium dihydrogen diphosphate | = 1800 mg/kg (Rat) | No data available | > 0.58 mg/L ( Rat ) 4 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Disodium dihydrogen diphosphate | No information available | No information available | No information available |

**12.2 Persistence and degradability**

Not Applicable - Inorganic chemical.

**12.3 Bioaccumulative potential**

Not Applicable - Inorganic chemical.

**12.4 Mobility**

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR002503

**Group number** 6.4A

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 11-Jun-2014 |
| **Revision date** | 06-Jul-2017 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

# Safety Data Sheet



| | | | |
|---|---|---|---|
| **Document group:** | 16-2219-0 | **Version number:** | 4.00 |
| **Issue Date:** | 27/09/2017 | **Supersedes date:** | 06/10/2014 |

This Safety Data Sheet has been prepared in accordance with the Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice (Safe Work Australia, December 2011)

## SECTION 1: Identification

### 1.1. Product identifier
3M™ Glass Bubbles HGS750, HGS2000, HGS3000, HGS4000, HGS5000, HGS6000, HGS8000X, HGS10000, HGS18000, HGS4K28, HGS19K46

**Product Identification Numbers**

| | | | | |
|---|---|---|---|---|
| 98-0212-2986-3 | 98-0212-2988-9 | 98-0212-3010-1 | 98-0212-3011-9 | 98-0212-3012-7 |
| 98-0212-3014-3 | 98-0212-3015-0 | 98-0212-3016-8 | 98-0212-3018-4 | 98-0212-3038-2 |
| 98-0212-3086-1 | 98-0212-3302-2 | 98-0212-3523-3 | WF-6009-1424-7 | WF-6009-1425-4 |

### 1.2. Recommended use and restrictions on use

**Recommended use**
Downhole Oil and Gas Applications, Industrial use.

For Industrial or Professional use only.

### 1.3. Supplier's details
**Address:** 3M Australia - Building A, 1 Rivett Road, North Ryde NSW 2113
**Telephone:** 136 136
**E Mail:** productinfo.au@mmm.com
**Website:** www.3m.com.au

### 1.4. Emergency telephone number
EMERGENCY: 1800 097 146 (Australia only)

## SECTION 2: Hazard identification

This product is NOT classified as a hazardous chemical according to the Model Work Health and Safety Regulations, 2011, in accordance with applicable State and Territory legislation.

Refer to Section 14 of this Safety Data Sheets for product Dangerous Goods Classification.

### 2.1. Classification of the substance or mixture
Not applicable.

### 2.2. Label elements

**Signal word**
Not applicable.

**Symbols**
Not applicable.

**Pictograms**
Not applicable.

**2.3. Other assigned/identified product hazards**
None known.

**2.4. Other hazards which do not result in classification**
May be harmful if swallowed.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

| Ingredient | CAS Nbr | % by Weight |
|---|---|---|
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | 97 - 100 |

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

**Inhalation**
Remove person to fresh air. If you feel unwell, get medical attention.

**Skin contact**
Wash with soap and water. If signs/symptoms develop, get medical attention.

**Eye contact**
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

**If swallowed**
Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**
See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**
Not applicable

## SECTION 5: Fire-fighting measures

**5.1. Suitable extinguishing media**
Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

**5.2. Special hazards arising from the substance or mixture**
None inherent in this product.

**5.3. Special protective actions for fire-fighters**
No special protective actions for fire-fighters are anticipated.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**
Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**
Collect as much of the spilled material as possible. Use wet sweeping compound or water to avoid dusting. Sweep up. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
For industrial or professional use only. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**7.2. Conditions for safe storage including any incompatibilities**
No special storage requirements.

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**

**Occupational exposure limits**
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

| Ingredient | CAS Nbr | Agency | Limit type | Additional comments |
|---|---|---|---|---|
| Glass filaments | 65997-17-3 | Australia OELs | TWA(8 hours):0.5 fibers/ml;TWA(as fiber)(8 hours):0.5 fibers/ml | |
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Manufacturer determined | TWA(as dust):10 mg/m3 | |

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
Australia OELs : Australia. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
CMRG : Chemical Manufacturer's Recommended Guidelines
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling
Sen: Sensitiser
Sk: Absorption through the skin may be a significant source of exposure.

**8.2. Exposure controls**

**8.2.1. Engineering controls**
Provide appropriate local exhaust ventilation at transfer points. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray.

If ventilation is not adequate, use respiratory protection equipment.

**8.2.2. Personal protective equipment (PPE)**

**Eye/face protection**

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Safety glasses with side shields.

Select and use eye protection in accordance with AS/NZS 1336. Eye protection should comply with the performance specifications of AS/NZS 1337.

**Skin/hand protection**
No chemical protective gloves are required.

**Respiratory protection**

Wear respiratory protection if ventilation is inadequate to prevent overexposure. An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for particulates.

For questions about suitability for a specific application, consult with your respirator manufacturer.
Select and use respirators according to AS/NZS 1715. Respirators should comply with AS/NZS 1716 performance specifications. For information about respirators, call 3M on 1800 024 464.

## SECTION 9: Physical and chemical properties

**9.1. Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid. |
| **Specific Physical Form:** | Fine Powder < 100 microns |
| **Appearance/Odour** | White, Odourless |
| **Odour threshold** | *Not applicable.* |
| **Melting point/Freezing point** | *No data available.* |
| **Boiling point/Initial boiling point/Boiling range** | *Not applicable.* |
| **Flash point** | *Not applicable.* |
| **Evaporation rate** | *Not applicable.* |
| **Flammability (solid, gas)** | Not classified |
| **Flammable Limits(LEL)** | *Not applicable.* |
| **Flammable Limits(UEL)** | *Not applicable.* |
| **Vapour pressure** | *Not applicable.* |
| **Vapour density** | *Not applicable.* |
| **Density** | 0.1 - 0.6 g/cm3 |
| **Relative density** | 0.1 - 0.6 [*Ref Std:*WATER=1] |
| **Water solubility** | Negligible |
| **Solubility- non-water** | *Not applicable.* |
| **Partition coefficient: n-octanol/water** | *No data available.* |
| **Autoignition temperature** | *Not applicable.* |
| **Decomposition temperature** | *Not applicable.* |
| **Viscosity** | *Not applicable.* |
| **Molecular weight** | *No data available.* |
| **Volatile organic compounds (VOC)** | *Not applicable.* |
| **Percent volatile** | < 0.5 % weight |

| | |
|---|---|
| **Softening point** | >=600 ºC |
| **VOC less H2O & exempt solvents** | *Not applicable.* |

## SECTION 10: Stability and reactivity

**10.1 Reactivity**
This material is considered to be non reactive under normal use conditions

**10.2 Chemical stability**
Stable.

**10.3. Conditions to avoid**
None known.

**10.4. Possibility of hazardous reactions**
Hazardous polymerisation will not occur.

**10.5 Incompatible materials**
None known.

**10.6 Hazardous decomposition products**

| **Substance** | **Condition** |
|---|---|
| Oxides of sulphur. | If Breakage Occurs |

## SECTION 11: Toxicological information

**The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labelling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.**

**11.1 Information on Toxicological effects**

**Signs and Symptoms of Exposure**

**Based on test data and/or information on the components, this material may produce the following health effects:**

**Inhalation**
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

**Skin contact**
Mechanical skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

**Eye contact**
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

**Ingestion**
May be harmful if swallowed.
Gastrointestinal irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhoea.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Overall product | Ingestion | | No data available; calculated ATE2,000 - 5,000 mg/kg |
| SODA LIME BOROSILICATE GLASS | Dermal | | LD50 estimated to be > 5,000 mg/kg |
| SODA LIME BOROSILICATE GLASS | Ingestion | | LD50 estimated to be 2,000 - 5,000 mg/kg |

ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

| Name | Species | Value |
|---|---|---|
| SODA LIME BOROSILICATE GLASS | Professional judgement | No significant irritation |

**Serious Eye Damage/Irritation**

| Name | Species | Value |
|---|---|---|
| SODA LIME BOROSILICATE GLASS | Professional judgement | No significant irritation |

**Skin Sensitisation**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Respiratory Sensitisation**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Germ Cell Mutagenicity**

| Name | Route | Value |
|---|---|---|
| SODA LIME BOROSILICATE GLASS | In Vitro | Some positive data exist, but the data are not sufficient for classification |

**Carcinogenicity**

| Name | Route | Species | Value |
|---|---|---|---|
| SODA LIME BOROSILICATE GLASS | Inhalation | Multiple animal species | Some positive data exist, but the data are not sufficient for classification |

**Reproductive Toxicity**

**Reproductive and/or Developmental Effects**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Specific Target Organ Toxicity - repeated exposure**

| Name | Route | Target Organ(s) | Value | Species | Test result | Exposure Duration |
|---|---|---|---|---|---|---|
| SODA LIME BOROSILICATE GLASS | Inhalation | respiratory system | Not classified | Human | NOAEL not available | occupational exposure |

**Aspiration Hazard**
For the component/components, either no data are currently available or the data are not sufficient for classification.

**Exposure Levels**
Refer Section **8.1 Control Parameters** of this Safety Data Sheet.

**Interactive Effects**
Not determined.

## SECTION 12: Ecological information

**The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.**

**12.1. Toxicity**

**Acute aquatic hazard:**
Not acutely toxic to aquatic life by GHS criteria.

**Chronic aquatic hazard:**
Not chronically toxic to aquatic life by GHS criteria.

No product test data available.

| Material | CAS Number | Organism | Type | Exposure | Test endpoint | Test result |
|---|---|---|---|---|---|---|
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Green algae | Experimental | 72 hours | EC50 | >1,000 mg/l |
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Water flea | Experimental | 72 hours | EC50 | >1,000 mg/l |
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Zebra Fish | Experimental | 96 hours | LC50 | >1,000 mg/l |
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Green algae | Experimental | 72 hours | NOEC | >=1,000 mg/l |

**12.2. Persistence and degradability**

| Material | CAS Number | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Data not available or insufficient for classification | N/A | N/A | N/A | N/A |

**12.3 : Bioaccumulative potential**

| Material | CAS Number | Test type | Duration | Study Type | Test result | Protocol |
|---|---|---|---|---|---|---|
| SODA LIME BOROSILICATE GLASS | 65997-17-3 | Data not available or insufficient for | N/A | N/A | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | classification | | | | |

**12.4. Mobility in soil**
Please contact manufacturer for more details

**12.5 Other adverse effects**
No information available.

## SECTION 13: Disposal considerations

**13.1. Disposal methods**
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility.

## SECTION 14: Transport Information

**Australian Dangerous Goods Code (ADG) - Road/Rail Transport**
**UN No.:** Not applicable.
**Proper shipping name:** Not applicable.
**Class/Division:** Not applicable.
**Sub Risk:** Not applicable.
**Packing Group:** Not applicable.

**Hazchem Code:** Not applicable
**IERG:** Not applicable.

**International Air Transport Association (IATA) - Air Transport**
**UN No.:** Not applicable.
**Proper shipping name:** Not applicable.
**Class/Division:** Not applicable.
**Sub Risk:** Not applicable.
**Packing Group:** Not applicable.

**International Maritime Dangerous Goods Code (IMDG)- Marine Transport**
**UN No.:** Not applicable.
**Proper shipping name:** Not applicable.
**Class/Division:** Not applicable.
**Sub Risk:** Not applicable.
**Packing Group:** Not applicable.
**Marine Pollutant:** Not applicable.

## SECTION 15: Regulatory information

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Australian Inventory Status:**
This product is defined as an article under the Industrial Chemicals (Notification and Assessment) Act 1989, as amended, and is exempt from inventory requirements under the Industrial Chemicals (Notification and Assessment) Act 1989 as amended.

**Poison Schedule:**This product is an article therefore the Standard for the Uniform Scheduling of Medicines and Poisons Schedule is not applicable.

## SECTION 16: Other information

**Revision information:**
Update to product identification numbers.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Safety Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.
Greenguard ® is a United States based program. The 'Low VOC' reference related to United States Federal and State regulations exemptions for some solvents.

**3M Australia SDSs are available at www.3m.com.au**

**SDS no.** D066
**Version** 3
**Revision date** 02-Mar-2020
**Supersedes Date:** 13-Jul-2017

# Safety Data Sheet
## Silica Flour D66

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Silica Flour D66
**Product code** D066

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

| | |
|---|---|
| **Malaysian** | Local emergency number; +603 2161 7655 |

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Quartz, Crystalline silica

Respirable Crystalline Silica (Quartz)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Quartz, Crystalline silica | 238-878-4 | 14808-60-7 | 60-100 |
| Respirable Crystalline Silica (Quartz) | 238-878-4 | 14808-60-7 | <10 |

**3.2 Mixtures**

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

| | |
|---|---|
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Hydrofluoric acid (HF) Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Respirable Crystalline Silica (Quartz) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Quartz, Crystalline silica | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| Respirable Crystalline Silica (Quartz) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Quartz, Crystalline silica | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA Confirmed carcinogen |

| | | | |
|---|---|---|---|
| Respirable Crystalline Silica (Quartz) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| Respirable Crystalline Silica (Quartz) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Quartz, Crystalline silica | 0.025 mg/m³ TWA | Not determined | Not determined |
| Respirable Crystalline Silica (Quartz) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene gloves Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Solid
**Appearance** Powder
**Odor** Odorless
**Color** Tan or White

**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | > 1700 °C / 3092 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.50 - 2.70 | @20 °C |
| **Bulk density** | 1100- 1600 kg/m$^3$ | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Not applicable
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** No information available
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
None known.

**10.4 Conditions to avoid**

Avoid dust formation.

### 10.5 Incompatible materials

Hydrofluoric acid (HF). Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. May cause respiratory irritation. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Quartz, Crystalline silica | No data available | No data available | No data available |
| Respirable Crystalline Silica (Quartz) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Respiratory system. Lungs.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Quartz, Crystalline silica | No information available | No information available | No information available |
| Respirable Crystalline Silica (Quartz) | No information available | No information available | No information available |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Quartz, Crystalline silica | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Quartz, Crystalline silica | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
The product is insoluble and sinks in water.

| Chemical Name | Mobility |
|---|---|
| Quartz, Crystalline silica | Insoluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Quartz, Crystalline silica | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 13-Jul-2017 |
| **Revision date** | 02-Mar-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D075
**Version** 4
**Revision date** 19-Sep-2018
**Supersedes Date:** 09-Apr-2014

# Safety Data Sheet
## Silicate Additive D75

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Silicate Additive D75
**Product code** D075

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep at temperatures above > 32F /0°C Avoid contact with: Strong acids Metals Aluminum Zinc Steel |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |
| **Packaging materials to be avoided** | Metal Aluminium Zinc Steel |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: PVC Rubber Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 11 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | - 1 °C / 30 °F | |
| **Boiling point/range** | 101 °C / 214 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | <1 kPa | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.3 - 1.6 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 10-10000 mPa s | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Contact with metals may evolve flammable hydrogen gas.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Keep at temperatures above > 32°F / 0°C.

### 10.5 Incompatible materials

Aluminum. Zinc. Metals. Strong acids. Steel.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Skin contact. Eye contact. |

| | |
|---|---|
| **Routes of entry** | None known. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 09-Apr-2014 |
| **Revision date** | 19-Sep-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | 15, 16 There have been changes with regard to classification. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** M003
**Version** 5
**Revision date** 18-Sep-2018
**Supersedes Date:** 10-Apr-2017

# Safety Data Sheet
## Soda Ash M3

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Soda Ash M3
**Product code** M003

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Buffer in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2A |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Sodium carbonate

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium carbonate | 207-838-8 | 497-19-8 | 60-100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid dust formation.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with water and moist air - product is hygroscopic. Store away from incompatibles, Powdered aluminum Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium carbonate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium carbonate | 2 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium carbonate | Not determined | Not determined | Skin notation<br>Skin |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium carbonate | Not determined | Not determined | Not determined |

**Notes**

No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Nitrile PVA Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 11 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | 851 °C / 1564 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Vapor pressure** | Not applicable | |
| **Vapor density** | Not applicable | |
| **Specific gravity** | 2.5 | @20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 2.53 | @ 20°C. |
| **Water solubility** | 212.5g/L | @ 20 °C |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | >400°C/ 752°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Decomposes by reaction with strong acids.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Protect from moisture. Avoid contact with water and moist air - product is hygroscopic.

**10.5 Incompatible materials**

Powdered aluminum. Strong acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and

cough.

**Eye contact** Causes serious eye irritation. May cause pain, redness, discomfort.

**Skin contact** May cause skin irritation and/or dermatitis.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium carbonate | = 4090 mg/kg ( Rat ) | No data available | = 2300 mg/m³ ( Rat ) 2 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium carbonate | 310 - 1220 mg/L LC50 Pimephales promelas 96 h = 300 mg/L LC50 Lepomis macrochirus 96 h | = 242 mg/L EC50 Nitzschia 120 h | = 265 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |

| | |
|---|---|
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 10-Apr-2017 |
| **Revision date** | 18-Sep-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | 1, 2, 7, 8, 15, 16 Updated according to GHS/CLP.<br>No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1490
**Version** 6
**Revision date** 31-Jan-2019
**Supersedes Date:** 17-Jun-2015

# Safety Data Sheet
## SODIUM BROMIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SODIUM BROMIDE BRINE
**Product code** PID1490

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Clear-brine workover and completion fluid.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium bromide

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of irritating gases and vapors

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium bromide | 231-599-9 | 7647-15-6 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
Do not use water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Bromine, bromine oxides and hydrogen bromide, Sodium oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Acids Metals Bromine trifluoride.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium bromide | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium bromide | Not determined | Not determined | 3 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium bromide | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Eye protection must conform to standard EN 166 Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene PVC<br>Break through time >240 minutes<br>Glove thickness =0.10 - 0.20 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 5.74 - 5.75 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.078 - 1.508 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | ~ 800 °C / ~1472°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 Incompatible materials**

Acids. Heavy metals. Bromine trifluoride.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium bromide | = 3500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | | | **aquatic invertebrates** |
| Sodium bromide | 0.054 - 0.081 mg/L LC50 Oncorhynchus mykiss 96 h > 1000 mg/L LC50 Lepomis macrochirus 96 h 15614 - 17428 mg/L LC50 Pimephales promelas 96 h = 16000 mg/L LC50 Poecilia reticulata 96 h > 1000 mg/L LC50 Oncorhynchus mykiss 96 h = 24000 mg/L LC50 Oryzias latipes 96 h 24000 - 96000 mg/L LC50 Oryzias latipes 96 h 16000 - 24000 mg/L LC50 Poecilia reticulata 96 h | 5800 - 24000 mg/L EC50 Scenedesmus pannonicus 96 h | 5700 - 10800 mg/L EC50 Daphnia magna 48 h 5800 - 48000 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Y. Proper Shipping Name: Sodium bromide solution (50% or less)

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium bromide
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 17-Jun-2015 |
| **Revision date** | 31-Jan-2019 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID1103
**Version** 6
**Revision date** 04-Aug-2020
**Supersedes Date:** 03-Apr-2017

# Safety Data Sheet
## SODIUM CHLORIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SODIUM CHLORIDE BRINE
**Product code** PID1103

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Weighting agent. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium Chloride

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium Chloride | 231-598-3 | 7647-14-5 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors Oxides of:, Sodium, Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium Chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical

hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training<br>Impervious gloves made of: Butyl PVC<br>Break through time >480 minutes<br>Glove thickness =>0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 8.5 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -5 °C / 23 °F | |
| **Boiling point/range** | 106 °C / 222.8 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |

| | | |
|---|---|---|
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | 1.008 - 1.200 g/cm³ | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium Chloride | 4747 - 7824 mg/L LC50 | No information available | 340.7 - 469.2 mg/L EC50 Daphnia |

| | | | |
|---|---|---|---|
| | Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | | magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z.
Proper Shipping Name: Drilling brines, including: calcium bromide solution, calcium chloride solution and sodium chloride solution.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Apr-2017 |
| **Revision date** | 04-Aug-2020 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | 1, 2, 7, 8, 12, 15, 16 No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | B |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID1104
**Version** 3
**Revision date** 04-Apr-2018
**Supersedes Date:** 03-Feb-2015

# Safety Data Sheet
## SODIUM CHLORIDE/SODIUM BROMIDE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SODIUM CHLORIDE/SODIUM BROMIDE BRINE
**Product code** PID1104

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Drilling fluid additive. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium bromide

Sodium chloride

**2.3 Other hazards**

Thermal decomposition can lead to release of irritating gases and vapors
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium bromide | 231-599-9 | 7647-15-6 | 30-60 |
| Sodium chloride | 231-598-3 | 7647-14-5 | 10-30 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Seek medical attention if irritation occurs.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the

length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Bromine, bromine oxides and hydrogen bromide, Chlorine, Sodium oxides, Chlorides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure controls/personal protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium bromide | Not determined | Not determined | Not determined |
| Sodium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Sodium chloride | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Sodium chloride | 5 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium bromide | Not determined | Not determined | 3 mg/m³ MAC |
| Sodium chloride | Not determined | Not determined | 5 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium bromide | Not determined | Not determined | Not determined |
| Sodium chloride | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl PVC<br>Break through time >480 minutes<br>Glove thickness >=0.5 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Odorless |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |

| | | |
|---|---|---|
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.0 - 1.6 | 25 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium bromide | = 3500 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | No data available |
| Sodium chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

**12.1 Toxicity**

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium bromide | 0.054 - 0.081 mg/L LC50 Oncorhynchus mykiss 96 h > 1000 mg/L LC50 Lepomis macrochirus 96 h 15614 - 17428 mg/L LC50 Pimephales promelas 96 h = 16000 mg/L LC50 Poecilia reticulata 96 h > 1000 mg/L LC50 Oncorhynchus mykiss 96 h = 24000 mg/L LC50 Oryzias latipes 96 h 24000 - 96000 mg/L LC50 Oryzias latipes 96 h 16000 - 24000 mg/L LC50 Poecilia reticulata 96 h | 5800 - 24000 mg/L EC50 Scenedesmus pannonicus 96 h | 5700 - 10800 mg/L EC50 Daphnia magna 48 h 5800 - 48000 mg/L EC50 Daphnia magna 48 h |
| Sodium chloride | = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |

## 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

## 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

## 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
The product has been assessed and contained in Chapters 17/18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code. Ship Type:- 3. Pollution Category:- Z.
Proper Shipping Name: Drilling brines, including: calcium bromide solution, calcium chloride solution and sodium chloride solution.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium bromide
Schedule 4
**New Zealand**

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 03-Feb-2015 |
| **Revision date** | 04-Apr-2018 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood Follow general hygiene considerations recognized as common good workplace practices

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID1505
**Version** 3
**Revision date** 18-Jun-2020
**Supersedes Date:** 02-Sep-2016

# Safety Data Sheet
## SODIUM FORMATE BRINE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SODIUM FORMATE BRINE
**Product code** PID1505

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Weighting agent. Completion brine.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Sodium formate

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium formate | 205-488-0 | 141-53-7 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sodium.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium formate | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium formate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium formate | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium formate | Not determined | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium formate | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC<br>Break through time >480 minutes<br>Glove thickness >=0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Provide eyewash station. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | Clear |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 8.6 | 10 % solution |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.99 - 1.318 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |

| | |
|---|---|
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | 29 cP (40 wt% solution) |
| **log Pow** | No information available |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from sources of ignition - No smoking.

**10.5 Incompatible materials**

Strong acids. Formic acid may be formed.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium formate | = 11200 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** No route of entry noted.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium formate | = 5000 mg/L LC50 Lepomis macrochirus 24 h | No information available | > 1000 mg/L EC50 Daphnia magna 24 h |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |

**ICAO/ANAC Hazard class/division** Not regulated

**14.4 Packing group**

**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**New Zealand Hazard Classification** Not classified

**HSNO approval no.** Not required.

**Group number** Not required.

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

**USA (TSCA)** Complies
**Canada (DSL)** Complies
**Philippines (PICCS)** Complies
**Japan (ENCS)** Complies
**China (IECSC)** Complies

| | |
|---|---|
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 02-Sep-2016 |
| **Revision date** | 18-Jun-2020 |
| **Version** | 3 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** PID15038A
**Version** 10
**Revision date** 29-Nov-2018
**Supersedes Date:** 20-Jun-2018

# Safety Data Sheet
## SODIUM HYDROXIDE

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SODIUM HYDROXIDE
**Product code** PID15038A

**Synonyms** CAUSTIC SODA, SODIUM HYDROXIDE PRILLS
Molecular weight 49.99 g/mol

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** pH modifier

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1A |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

## 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage
H290 - May be corrosive to metals

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P234 - Keep only in original container
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P406 - Store in corrosive resistant stainless steel container with a resistant inner liner

**Contains**
Sodium hydroxide

## 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Contact with metals may evolve flammable hydrogen gas
The product reacts with water and will generate heat.

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

# 3. Composition/information on Ingredients

## 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium hydroxide | 215-185-5 | 1310-73-2 | 60-100 |

## 3.2 Mixtures

Not applicable

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get immediate medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Contact with metals may evolve flammable hydrogen gas. The product reacts with water and will generate heat.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapors Sodium oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Avoid dust formation. Do not breathe dust. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Flush area with flooding quantities of water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid dust formation. Do not breathe dust. Avoid spills and splashing during use. Reacts violently with water.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture

Reacts violently with water Store in original container. Avoid contact with: Metals Acids

**Storage class** Corrosive storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium hydroxide | Not determined | 2 mg/m³ Peak | 2 mg/m³ Ceiling |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ Ceiling | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium hydroxide | Not determined | 2.0 mg/m³ STEL | 2 mg/m³ Ceiling |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium hydroxide | 2 mg/m³ Ceiling | 2 mg/m³ TWA | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium hydroxide | 2 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against powders and dusts
Chemical splash goggles and/or face shield

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders
Impervious gloves made of: Nitrile Rubber PVC
Break through time >480 minutes
Glove thickness 0.5 mm
Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Pellets |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 14.0 | @ 5% |
| **Melting / freezing point** | 318 °C / 604.4 °F | |
| **Boiling point/range** | 1390 °C / 2534 °F | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 3.5 hPa | @ 800 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | 1.1-1.25 g/cm3 | |
| **Relative density** | 2.13 g/cm3 | @ 25°C. |
| **Water solubility** | Completely soluble | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | Not applicable |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | 49.99 g/mol |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive. Corrosive to Metals. Contact with metals may evolve flammable hydrogen gas. Reacts violently with water.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Do not add water directly to the product. It may cause a violent reaction. Avoid dust formation.

### 10.5 Incompatible materials

Acids. Metals. Water.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhaled corrosive substances can lead to a toxic edema of the lungs. Contact with moist mucous membranes of the respiratory system can cause burns and lung damage. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes burns.

**Ingestion** Causes burns. Can burn mouth, throat, and stomach.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium hydroxide | No data available | 1350 mg/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. Ingestion. Skin contact. Eye contact. |
| **Routes of entry** | Skin contact. Eye contact. Ingestion. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium hydroxide | = 45.4 mg/L LC50 Oncorhynchus mykiss 96 h | No information available | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Sodium hydroxide | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Sodium hydroxide | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Sodium hydroxide | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Sodium hydroxide | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN1823
**UN No. (IMDG/ANTAQ)** UN1823
**UN No. (ICAO/ANAC)** UN1823

### 14.2. UN proper shipping name

SODIUM HYDROXIDE, SOLID,

### 14.3 Hazard class(es)

**ADR/RID/ADN/ADG Hazard class** 8
**IMDG/ANTAQ Hazard class** 8
**ICAO/ANAC Hazard class/division** 8

### 14.4 Packing group

**ADR/RID/ADN/ADG Packing group** II
**IMDG/ANTAQ Packing group** II
**ICAO/ANAC Packing group** II


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2W |
| **Tunnel restriction code** | (E) |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Sodium hydroxide
Schedule 6
Schedule 5

| | |
|---|---|
| **New Zealand Hazard Classification** | Classified |
| **HSNO approval no.** | HSR001547 |
| **Group number** | n/a |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 20-Jun-2018 |
| **Revision date** | 29-Nov-2018 |
| **Version** | 10 |
| **This SDS has been revised in the following section(s)** | 1, 7, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** PID1524
**Version** 6
**Revision date** 18-Jun-2018
**Supersedes Date:** 13-Sep-2015

# Safety Data Sheet
## SP-101*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SP-101*
**Product code** PID1524

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Fluid loss reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components
**2.3 Other hazards**

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes extremely slippery when wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**

Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes extremely slippery when wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Suspended dust may present a dust explosion hazard Protect from moisture Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents Strong acids |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene PVC Frequent change is advisable |

**Respiratory protection** No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Granules Dust |
| **Odor** | Slight |
| **Color** | Off-white - Cream |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 7 | @1% |
| **Melting / freezing point** | > 150 °C / > 302 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | 20 °C |
| **Bulk density** | 392 kg/m³ / 24.5 lb/ft³ | |
| **Relative density** | 0.2 - 0.9 | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | > 150° / 302°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | <0 | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** None known.

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

**Hazardous Reactions**
Oxidizing agents may cause exothermic reactions.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **LD50 Oral** | > 5000 mg/kg (rat) estimated (MIXTURE) |
| **LD50 Dermal** | > 5000 mg/kg (rat) estimated (MIXTURE) |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
IC50/Algae/72 hrs. : > 100 mg/L (Estimated) (MIXTURE).

**Toxicity to fish**
LC50/Oncorhynchus mykiss/96 hrs. : > 100 mg/L (Estimated) (MIXTURE).

**Toxicity to daphnia and other aquatic invertebrates**
EC50/Daphina/48 hrs. : > 100 mg/L (Estimated) (MIXTURE).

### 12.2 Persistence and degradability

Not readily biodegradable.

### 12.3 Bioaccumulative potential

The product does not contain any substances expected to be bioaccumulating.

**log Pow**
<0

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 13-Sep-2015 |
| **Revision date** | 18-Jun-2018 |

| | |
|---|---|
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** D259
**Version** 2
**Revision date** 12-Jul-2019
**Supersedes Date:** 21-Nov-2016

# Safety Data Sheet
## Spacer Additive D259

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Spacer Additive D259
**Product code** D259

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains** No hazardous components

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature

Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

### 4.1 First aid measures

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Harmful organic chemical fumes.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up**
Avoid dust formation. Take up mechanically and collect in suitable container for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Protect from moisture Keep at < 122 °F/ 50°C<br>Do not store and transport with oxidizers, acids and bases. |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Nitrile Neoprene gloves Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation, wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash |

contaminated clothing before re-use

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Fibrous |
| **Odor** | Sweet |
| **Color** | White or Light yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | Not applicable | |
| **Melting / freezing point** | 215 - 225 °C / 419 - 437 °F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | Not applicable | |
| **Vapor density** | Not applicable | |
| **Specific gravity** | 1.2 - 1.3 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.2-1.3 | @ 25°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 388 °C / 730 °F | |
| **Decomposition temperature** | > 230 °C / >446 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge. Keep away from direct sunlight. Keep at <50°C / 122°F°C. Protect from moisture.

### 10.5 Incompatible materials

Strong oxidizing agents. Acids. Bases.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Inhalation. Skin contact. Eye contact. |

| | |
|---|---|
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Inherently biodegradable.

### 12.3 Bioaccumulative potential

Product has a low potential to bioconcentrate.

### 12.4 Mobility

**Mobility**
Insoluble in water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Exempt |
| **Philippines (PICCS)** | Exempt |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Exempt |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 21-Nov-2016 |
| **Revision date** | 12-Jul-2019 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 8. EXPOSURE CONTROLS / PERSONAL PROTECTION 15. Regulatory Information No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on**

**measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D231
**Version** 4
**Revision date** 20-Aug-2018
**Supersedes Date:** 26-Nov-2014

# Safety Data Sheet
## Spacer Solvent D231

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Spacer Solvent D231
**Product code** D231

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves and eye/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
2,2-dimethyl-1,3-dioxolan-4-ylmethanol

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Combustible liquid
Vapors are heavier than air and may spread along floors

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | 202-888-7 | 100-79-8 | 60 - 100 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

| | |
|---|---|
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Dry chemical, $CO_2$, alcohol-resistant foam or water spray, Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Combustible material.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Avoid contact with eyes. Keep away from heat, sparks, and flame. Remove all sources of ignition. Ensure adequate ventilation.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. All equipment used when handling the product must be grounded.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Ensure all equipment is electrically grounded before beginning transfer operations.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition Avoid excessive heat for prolonged periods of time. Avoid frost. Avoid contact with: Strong oxidizing agents Strong reducing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only. Steel or high density polyethylene (HDPE) container

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmetha | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| nol | | | |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Wear chemical resistant gloves such as nitrile or neoprene.
Break through time >480 minutes
Glove thickness 0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141)

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use Wash hands before breaks and immediately after handling the product

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid

| | |
|---|---|
| **Appearance** | Oily |
| **Odor** | Pleasant |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | -99 °C/ -146 °F | |
| **Boiling point/range** | 189 - 191 °C/ 373 - 376 °F | |
| **Flash point** | 91 °C/ 196 °F | |
| **Evaporation rate (BuAc =1)** | = 0.03 | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 0.05 hPa (@ 20°C) | |
| **Vapor density** | 2.6 (air = 1) | |
| **Specific gravity** | 1.059 - 1.079 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Completely soluble | |
| **Solubility in other solvents** | Soluble in hydrocarbons | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 11 mPas @ 20 °C | |
| **log Pow** | Not determined | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product. Combustible liquid.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Keep away from direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Avoid excessive heat for prolonged periods of time. Avoid frost.

### 10.5 Incompatible materials

Strong oxidizing agents. Strong reducing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | = 7 g/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing. Not classified.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact. Inhalation. Skin contact.

**Routes of entry** Eye contact. Inhalation. Skin contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

## 12.1 Toxicity

Ecotoxicity effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | 15200 - 18300 mg/L LC50 Pimephales promelas 96 h | 72 h - ErC50 > 92 mg/L | 48 hr EC50: > 96 mg/L |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Inherently biodegradable OECD (302B) |

## 12.3 Bioaccumulative potential

Product has a low potential to bioconcentrate.

| Chemical Name | Bioaccumulation |
|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | log Kow <=3 |

## 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

| Chemical Name | Mobility |
|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | 172 mg/ml@20 °C |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| 2,2-dimethyl-1,3-dioxolan-4-ylmethanol | Log Koc: < 1.25 |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable None

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 26-Nov-2014 |
| **Revision date** | 20-Aug-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections Updated according to GHS/CLP. No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 2 |
| Flammability | 2 |
| Physical hazard | 0 |
| PPE | C |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D241A
**Version** 2
**Revision date** 27-Aug-2018
**Supersedes Date:** 30-Jun-2014

# Safety Data Sheet
## Spacer Solvent D241A

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Spacer Solvent D241A
**Product code** D241A

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Cleaning agent

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Aspiration toxicity | Category 1 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards**

| | |
|---|---|
| Chronic aquatic toxicity | Category 3 |

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H304 - May be fatal if swallowed and enters airways
H318 - Causes serious eye damage
H412 - Harmful to aquatic life with long lasting effects

**Precautionary statements**
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P331 - Do NOT induce vomiting
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics*

Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)*

Alcohols, C9-11-iso-, C10-rich

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | 926-141-6 | RM1004246 | 60-100 |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | 931-329-6 | RM1002627 | 5-<10 |
| Alcohols, C9-11-iso-, C10-rich | 271-234-0 | 68526-85-2 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
*Substances which have an EC Number that begins with the number "9" is a Provisional List Number. The list numbers published by ECHA do not have any legal significance. The EC substance definition and related classification & labelling has been developed in the framework of the Regulation (EC) No 1907/2006 (REACH). For information about the related CAS number see section 15 of

this SDS.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. If conscious, drink plenty of water. Never give anything by mouth to an unconscious person. Risk of product entering the lungs on vomiting after ingestion. Seek medical attention.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Seek medical attention.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke), Nitrogen oxides (NOx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded Avoid heat, flames and other sources of ignition. Incompatible with oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. Steel or high density polyethylene (HDPE) container |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits**

Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, <2% aromatics OEL vapour (Total Hydrocarbons/RCP) – TWA 1200mg/m³ (165ppm)
Above Occupational Exposure Limit (OEL) is a “in-house” calculated value provided from Suppliers of this component and calculated as per CEFIC/HSPA/UK EH 40 guidelines.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not determined | Not determined | Not determined |
| Alcohols, C9-11-iso-, C10-rich | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not determined | Not determined | Not determined |
| Alcohols, C9-11-iso-, C10-rich | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not determined | Not determined | Not determined |
| Alcohols, C9-11-iso-, C10-rich | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not determined | Not determined | Not determined |
| Alcohols, C9-11-iso-, C10-rich | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Not determined | Not determined | Not determined |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not determined | Not determined | Not determined |
| Alcohols, C9-11-iso-, C10-rich | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes<br>Chemical splash goggles and/or face shield |
| **Hand protection** | Wear gloves according to EN 374 resistant to the solvent(s) in use<br>Use protective gloves made of: Nitrile<br>Break through time >480 minutes<br>Glove thickness 0.38 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Type A/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Clear |
| **Odor** | None |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -20 °C / -4 °F | |
| **Boiling point/range** | > 200 °C / 392 °F | |
| **Flash point** | 65 °C / 149 °F | Seta closed cup |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |

| | | |
|---|---|---|
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | < 2 cPs | @ 40 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 0.80 ± 0.03 g/ml (@ 20°C) |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid contact with heat, sparks, open flame, and static discharge.

**10.5 Incompatible materials**

Incompatible with oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Product information** | Prolonged and repeated contact with solvents over a long period may lead to permanent health problems. |
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Causes serious eye damage. |
| **Skin contact** | Repeated exposure may cause skin dryness or cracking. |
| **Ingestion** | May be fatal if swallowed and enters airways. Potential for aspiration if swallowed. |

Aspiration may cause pulmonary edema and pneumonitis.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | > 5000 mg/kg (Rat) | > 2000 mg/kg ( Rabbit ) | > 5.2 mg/L ( Rat ) 4 h |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | > 2000 mg/kg (Rat) OECD 401 Literature data | > 2000 mg/kg (Rabbit) Literature data | No data available |
| Alcohols, C9-11-iso-, C10-rich | = 4626 mg/kg ( Rat ) | > 2600 mg/kg ( Rabbit ) | > 0.6 mg/L ( Rat ) 6 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of exposure** Eye contact. Ingestion.

**Routes of entry** Ingestion. Skin contact. Eye contact. Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** May be fatal if swallowed and enters airways.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l Exposure time: 96 h | EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l | EL50 (Water flea (Daphnia magna)): 1,4 mg/l Exposure time: 48 h |

| | | | |
|---|---|---|---|
| | Test Type: semi-static test<br>Test substance: WAF<br>Method: OECD Test Guideline 203<br>Remarks: Information given is based on data obtained from similar substances. | Exposure time: 72 h<br>Test Type: static test<br>Test substance: WAF<br>Method: OECD Test Guideline 201<br>Remarks: Information given is based on data obtained from similar substances. | Test Type: static test<br>Test substance: WAF<br>Method: OECD Test Guideline 202<br>Remarks: Information given is based on data obtained from similar substances. |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | LC50 = 2.4 mg/l 96 h. Litterature data. | EC50 = 18.6 mg/l 75 h. Literature data. | EC50 = 3.2 mg/l. 48h. Literature data. |
| Alcohols, C9-11-iso-, C10-rich | >10 - <100 mg/l | >10 - <100 mg/l | >10 - <100 mg/l |

## 12.2 Persistence and degradability

Product is biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | Inherently biodegradable OECD 301F : 58.6% Duration 28 days |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Readily biodegradable |

## 12.3 Bioaccumulative potential

Does not bioaccumulate.

| Chemical Name | Bioaccumulation |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Does not bioaccumulate |

## 12.4 Mobility

**Mobility**
The product is insoluble and floats on water.

| Chemical Name | Mobility |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Soluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics* | No information available |
| Amides, C8-18 (even numbered) and C18-unsatd., N, N-bis(hydroxyethyl)* | Not expected to adsorb on soil Notes: Calculated data (in silico) |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Does not comply |

CAS Number 64742-47-8, 68155-07-7 can be used to identify the substance given a list number in section 3 in areas not subject to the REACH regulation.

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Ingrid Helland |
| **Supersedes Date:** | 30-Jun-2014 |
| **Revision date** | 27-Aug-2018 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**SDS no.** PID1530
**Version** 5
**Revision date** 16-Jan-2018
**Supersedes date** 04-Feb-2015

# Safety Data Sheet
## SPERSENE* CF

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** SPERSENE* CF
**Product code** PID1530

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Thinner.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains**
**2.3 Other hazards**

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

This product does not contain any hazardous ingredients, or ingredients with national workplace exposure limits.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulphur dioxide.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Material becomes slippery when wet. Use caution if wet. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Avoid dust formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. Suspended dust may present a dust explosion hazard Avoid heat, flames and other sources of ignition. Protect from moisture Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust.<br>No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required. See section 7 for more information

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European |

| | |
|---|---|
| | Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | Dark brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 3.0 - 4.0 | 2% sol. |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.53 | 20 °C |
| **Bulk density** | 23.1-26.2 lb/ft³ (370-420 kg/m³) | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 250 - 300 °C / 482 - 572 °F | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Protect from moisture. Avoid dust formation. Avoid heat, flames and other sources of ignition.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
Listed on PLONOR list of OSPAR

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand hazard classification** | Not classified. |
| **HSNO approval no.** | Not required. |
| **Group number** | Not required. |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes date** | 04-Feb-2015 |
| **Revision date** | 16-Jan-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Full text of H-Statements referred to under sections 2 and 3**

This product is not classified as hazardous therefore no (H) hazard statements assigned.

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** PID11833
**Version** 7
**Revision date** 22-Oct-2019
**Supersedes Date:** 13-Oct-2016

# Safety Data Sheet
STARGLIDE*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** STARGLIDE*
**Product code** PID11833

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lubricant

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H318 - Causes serious eye damage

**Precautionary statements**
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 500-012-0 | 9004-77-7 | 30-60 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. If conscious, drink plenty of water. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands before eating, drinking or smoking Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with: Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection**
Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection**
Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection**
No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection**
Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures**
Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure**
Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** Liquid
**Appearance** No information available
**Odor** Slight
**Color** Yellow
**Odor threshold** Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | < -10 °C / 14 °F | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 130 °C / > 266 °F | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

**Explosive properties** Not applicable
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** 0.93 - 0.97 g/ml

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**LD50 Oral** > 2000 mg/kg (rat) Calculated (MIXTURE)

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | 2630 mg/kg (Rat) | 3540 mg/kg bw (Rabbit) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact.

**Routes of entry** Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | LC50 >1800 mg/l, 96h Scophthalmus maximus OECD 203 | EC50: 2490 mg/l, 72h Selenastrum capricornutum OECD 201 | EC50 >3200 mg/l, 48h Daphnia magna OECD 202 |

## 12.2 Persistence and degradability

Product is biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | OECD 301D 76% |

## 12.3 Bioaccumulative potential

The product contains potentially bioaccumulating substances. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | log Kow 0.44@20°C |

## 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Soluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Poly(oxy-1,2-ethanediyl), a-butyl-omega-hydroxy | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

No poisons schedule number allocated

**New Zealand Hazard Classification** Classified

**HSNO approval no.** HSR002606

**Group number** 8.3A

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

**Prepared by** Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse

**Supersedes Date:** 13-Oct-2016

**Revision date** 22-Oct-2019

**Version** 7

**This SDS has been revised in the following section(s)** All sections No changes with regard to classification have been made. Updated according to GHS/CLP.

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D205
**Version** 2
**Revision date** 10-Jun-2020
**Supersedes Date:** 28-Jul-2016

# Safety Data Sheet
## Swelling Additive D205

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Swelling Additive D205
**Product code** D205

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Silicon Dioxide

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Silicon Dioxide | 231-545-4 | 7631-86-9 | 1-5 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid generating or breathing dust. Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Keep away from direct sunlight. Avoid excessive heat for prolonged periods of time. Store at ambient conditions Store away from incompatibles, Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Silicon Dioxide | Not determined | 2mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Silicon Dioxide | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Silicon Dioxide | 1 mg/m³ MAC<br>2 mg/m³ MAC | 6.0 mg/m³ TWA | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Silicon Dioxide | Not determined | Not determined | 3 mg/m³ STEL<br>6 mg/m³ STEL<br>1 mg/m³ TWA<br>2 mg/m³ TWA<br>Fibrogenic substance also vitreous, in the form of disintegration aerosol 1177<br>Fibrogenic substance in the form of condensation aerosol, containing >=10% Silicon dioxide 1175, 1176 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Silicon Dioxide | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Use protective gloves made of: Neoprene Nitrile Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product |

### 8.2.3 Environmental exposure controls

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Micro-beads |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |

| | | |
|---|---|---|
| **Bulk density** | 300 - 400 Kg/m³ | @ 20°C. |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 880 - 950 Kg/m³ @20°C |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Take precautionary measures against static charges. Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Avoid excessive heat for prolonged periods of time. Store at ambient conditions.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

**11.1 Information on toxicological effects**

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Silicon Dioxide | = 7900 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 2.2 mg/L ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Ingestion. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
No product level data available. See component information below.

**Toxicity to fish**
No product level data available. See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
No product level data available. See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Silicon Dioxide | = 5000 mg/L LC50 Brachydanio rerio 96 h | = 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 7600 mg/L EC50 Ceriodaphnia dubia 48 h |

### 12.2 Persistence and degradability

The product is not expected to be biodegradable.

| Chemical Name | Persistence and degradability |
|---|---|
| Silicon Dioxide | No information available |

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

| Chemical Name | Bioaccumulation |
|---|---|
| Silicon Dioxide | Not likely to bioaccumulate |

### 12.4 Mobility

**Mobility**
The product is insoluble and floats on water.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number

Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |

| | |
|---|---|
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 28-Jul-2016 |
| **Revision date** | 10-Jun-2020 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | 3, 6, 7, 8, 10, 11, 12, 15, 16 No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D198
**Version** 4
**Revision date** 06-Jul-2020
**Supersedes Date:** 09-Dec-2015

# Safety Data Sheet
## Synthetic Solid Cement Retarder D198

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Synthetic Solid Cement Retarder D198
**Product code** D198
**Country Limitations** This SDS is not for use in the European Union (EU).

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Specific target organ toxicity - Repeated exposure | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P314 - Get medical advice/attention if you feel unwell
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

–

**Contains**
Quartz, Crystalline silica

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria
Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Quartz, Crystalline silica | 238-878-4 | 14808-60-7 | 60 - 100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water. Remove contaminated clothing and

shoes. Seek medical attention if irritation occurs.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors React with hydrofluoric acid (HF) forming toxic gas (SiF4).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. For personal protection see section 8.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Keep airborne concentrations below exposure limits. Provide appropriate exhaust ventilation at places where dust is formed. Take precautionary measures against static discharges.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Store away from incompatibles, React with hydrofluoric acid (HF) forming toxic gas (SiF4) Strong oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Quartz, Crystalline silica | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |

| | | | |
|---|---|---|---|
| Quartz, Crystalline silica | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Quartz, Crystalline silica | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Quartz, Crystalline silica | 0.025 mg/m³ TWA | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** Wear gloves according to EN 374 to protect against skin effects from powders Repeated or prolonged contact Use protective gloves made of: Nitrile Neoprene gloves Frequent change is advisable

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White - Tan |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | > 1700 ◦C / 3092 ◦F | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |
| **Relative Vapor Density** | No information available | |
| **Specific gravity** | 2.3 | @20 °C |
| **Bulk density** | 1100 -1600 kg/m$^3$ | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |
| **Explosive properties** | Suspended dust may present a dust explosion hazard | |
| **Oxidizing properties** | No information available | |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

React with hydrofluoric acid (HF) forming toxic gas (SiF4).

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

**10.5 Incompatible materials**

Hydrofluoric acid (HF). Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Quartz, Crystalline silica | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Category 2.

**Target organ effects** Lungs. Respiratory system.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that

large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Quartz, Crystalline silica | No information available | No information available | No information available |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Quartz, Crystalline silica | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Quartz, Crystalline silica | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Quartz, Crystalline silica | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Quartz, Crystalline silica | Not expected to adsorb on soil |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 09-Dec-2015 |
| **Revision date** | 06-Jul-2020 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12189
**Version** 4
**Revision date** 16-May-2019
**Supersedes Date:** 23-Feb-2016

# Safety Data Sheet
## THRUCARB*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** THRUCARB*
**Product code** PID12189

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Bridging material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Calcium carbonate

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Strong acids

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA |

| | | | Fibrogenic substance 1177, 1178 |
|---|---|---|---|
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Odorless |
| **Color** | White |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 8.4 - 10.2 | @ 5% sol. |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |

| | | |
|---|---|---|
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 2.5 - 2.8 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | 825 °C / 1517°F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

**10.5 Incompatible materials**

Strong acids.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium carbonate | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

## 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Inorganic compound |

## 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |

## 12.4 Mobility

**Mobility**
See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

## 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

## 12.6 Other adverse effects.

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 23-Feb-2016 |
| **Revision date** | 16-May-2019 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on**

**measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID12188
**Version** 5
**Revision date** 15-Mar-2018
**Supersedes Date:** 16-Mar-2015

# Safety Data Sheet
THRUTROL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** THRUTROL*
**Product code** PID12188

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Fluid loss reducer.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains**
**2.3 Other hazards**

Suspended dust may present a dust explosion hazard
Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on ingredients

**3.1 Substances**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash skin thoroughly with soap and water. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8. Material becomes slippery when wet. Use caution if wet.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Take precautionary measures against static discharges. Sweep up and shovel into suitable containers for disposal. Avoid dust

formation. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Material becomes slippery when wet. Use caution if wet.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place. Suspended dust may present a dust explosion hazard Protect from moisture Avoid heat, flames and other sources of ignition. Avoid contact with: Strong oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | NUI = Nuisance dust, TWA 4mg/m$^3$ Respirable Dust, 10mg/m$^3$ Total Dust. No biological limit allocated |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Nitrile Neoprene Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient |

| | |
|---|---|
| | ventilation wear suitable respiratory equipment Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder Dust |
| **Odor** | Slight |
| **Color** | Off-white |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Not applicable | |
| **pH @ dilution** | 9.0 - 10.5 | @ 4% |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.5 | @ 20 °C |
| **Bulk density** | 30 - 45 lb / ft³ | |
| **Relative density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Dust may form explosive mixture in air.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Take precautionary measures against static charges. Protect from moisture. Avoid dust formation.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Inhalation. |
| **Routes of entry** | Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Product is biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

**12.5 Results of PBT and vPvB assessment**

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues / unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 16-Mar-2015 |
| **Revision date** | 15-Mar-2018 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections Product Code change No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

**Training Advice**
Do not handle until all safety precautions have been read and understood
Follow general hygiene considerations recognized as common good workplace practices

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**SDS no.** D065
**Version** 6
**Revision date** 08-Jun-2021
**Supersedes Date:** 18-Jun-2014

# Safety Data Sheet
## TIC* D65 Dispersant

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

| | |
|---|---|
| **Product name** | TIC* D65 Dispersant |
| **Product code** | D065 |
| **Country Limitations** | This SDS is not for use in the European Union (EU). |

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Recommended Use** | Used as a cementing additive in oilfield applications |
| **Uses advised against** | Consumer use |

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

| | |
|---|---|
| **Health hazards** | Not classified |
| **Environmental hazards** | Not classified |
| **Physical Hazards** | Not classified |

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

**Contains**
Sodium sulfate (Impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Sodium sulfate (Impurity) | 231-820-9 | 7757-82-6 | 1-5 |

**3.2 Mixtures**

Not applicable

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

| | |
|---|---|
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Suspended dust may present a dust explosion hazard.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx), Sulfur dioxide.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Keep away from combustible material. Avoid contact with heat, sparks, open flame, and static discharge. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid dust formation. Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust. Take precautionary measures against static discharges. Use non-sparking tools and equipment. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid handling causing generation of dust. All equipment used when handling the product must be grounded. Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Fine dust dispersed in air may ignite. Take precautionary measures against static discharges.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Do not eat, drink or smoke when using this product Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Protect from moisture

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.
Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m³ (Inhalable); 3 mg/m³ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m³ (Total); 5 mg/m³ (Respirable).

**Component Information**

| **Chemical Name** | **Arabic** | **Australia** | **Egypt** |
|---|---|---|---|
| Sodium sulfate (Impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium sulfate (Impurity) | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium sulfate (Impurity) | 10 mg/m³ MAC | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium sulfate (Impurity) | Not determined | Not determined | 10 mg/m³ MAC |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium sulfate (Impurity) | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

**8.2 Exposure controls**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Use protective gloves made of: Nitrile Neoprene<br>Frequent change is advisable |
| **Respiratory protection** | No personal respiratory protective equipment normally required In case of insufficient ventilation wear suitable respiratory equipment Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust) Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Faint |
| **Color** | Tan |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | Approximately 10 | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | Not applicable | |
| **Flash point** | Does not flash | |
| **Evaporation rate (BuAc =1)** | Not applicable | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |

| | | |
|---|---|---|
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | Not applicable | |
| **Relative Vapor Density** | Not applicable | |
| **Specific gravity** | 0.8 | 20 °C |
| **Bulk density** | No information available | |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **Partition Coefficient (n-octanol/water)** | No information available | |
| **Density and/or Relative Density** | No information available | |

| | |
|---|---|
| **Explosive properties** | Suspended dust may present a dust explosion hazard |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Avoid contact with heat, sparks, open flame, and static discharge. Protect from moisture. Keep away from direct sunlight.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological information

**11.1 Information on toxicological effects**

**Acute toxicity**

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium sulfate (Impurity) | > 10000 mg/kg ( Rat ) | > 4 g/kg ( Rabbit ) | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation. Skin contact. Eye contact.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not classified.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium sulfate (Impurity) | = 13500 mg/L LC50 Lepomis | No information available | = 630 mg/L EC50 Daphnia magna |

| | | | |
|---|---|---|---|
| | macrochirus 96 h 3040 - 4380 mg/L LC50 Lepomis macrochirus 96 h > 6800 mg/L LC50 Pimephales promelas 96 h 13500 - 14500 mg/L LC50 Pimephales promelas 96 h | | 96 h = 2564 mg/L EC50 Daphnia magna 48 h |

### 12.2 Persistence and degradability

No product level data available.

### 12.3 Bioaccumulative potential

No product level data available.

### 12.4 Mobility

**Mobility**
Soluble in water.

**Mobility in soil**
No information available.

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated

| | |
|---|---|
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | Complies |

This SDS is not for use in the European Union (EU).

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |

| | |
|---|---|
| **Supersedes Date:** | 18-Jun-2014 |
| **Revision date** | 08-Jun-2021 |
| **Version** | 6 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID10480
**Version** 5
**Revision date** 10-Sep-2019
**Supersedes Date:** 16-Mar-2016

# Safety Data Sheet
ULTRADRIL*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ULTRADRIL*
**Product code** PID10480

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H315 - Causes skin irritation
H319 - Causes serious eye irritation

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P337 + P313 - If eye irritation persists: Get medical advice/attention

**Supplementary precautionary statements**
P362 + P364 - Take off contaminated clothing and wash it before reuse
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Contains**
Sodium Chloride

Barite

Calcium carbonate

Potassium Chloride

Crystalline silica (impurity)

Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Sodium Chloride | 231-598-3 | 7647-14-5 | 30-60 |
| Barite | 236-664-5 | 13462-86-7 | 10-30 |
| Calcium carbonate | 207-439-9 | 471-34-1 | 5-10 |
| Potassium Chloride | 231-211-8 | 7447-40-7 | 1-5 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <2 |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | - | 9046-10-0 | 1-<3 |

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

The product contains other ingredients which do not contribute to the overall classification.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**

Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply.
No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Sodium Chloride | Not determined | Not determined | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Sodium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Barite | 6 mg/m³ MAC | Not determined | Not determined |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Potassium Chloride | 5 mg/m³ MAC | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Sodium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Barite | Not determined | Not determined | 6 mg/m³ TWA<br>Fibrogenic substance 0242 |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Potassium Chloride | Not determined | Not determined | 5 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA |

| | | | |
|---|---|---|---|
| | | | Fibrogenic substance 1177, 1178 |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Sodium Chloride | Not determined | Not determined | Not determined |
| Barite | Not determined | Not determined | Not determined |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Potassium Chloride | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Viscous |
| **Odor** | Mild |
| **Color** | Light brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | No information available | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

**Inhalation** May cause irritation of respiratory tract.

**Eye contact** Causes serious eye irritation.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Sodium Chloride | = 3 g/kg ( Rat ) | > 10 g/kg ( Rabbit ) | > 42 g/m³ ( Rat ) 1 h |
| Barite | > 15000 mg/kg ( Rat ) | No data available | No data available |
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Potassium Chloride | = 2600 mg/kg ( Rat ) | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | 2885 mg/kg ( Rat ) OECD 401 | 2979 mg/kg ( Rabbit ) OECD 402 | > 0.74 mg/l ( Rat ) OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Eye contact. Skin contact. Inhalation.

**Routes of entry** Inhalation.

| | |
|---|---|
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Sodium Chloride | 4747 - 7824 mg/L LC50 Oncorhynchus mykiss 96 h 6420 - 6700 mg/L LC50 Pimephales promelas 96 h = 7050 mg/L LC50 Pimephales promelas 96 h 6020 - 7070 mg/L LC50 Pimephales promelas 96 h = 12946 mg/L LC50 Lepomis macrochirus 96 h 5560 - 6080 mg/L LC50 Lepomis macrochirus 96 h | No information available | 340.7 - 469.2 mg/L EC50 Daphnia magna 48 h = 1000 mg/L EC50 Daphnia magna 48 h |
| Barite | No information available | No information available | No information available |
| Calcium carbonate | No information available | No information available | No information available |
| Potassium Chloride | 750 - 1020 mg/L LC50 Pimephales promelas 96 h = 1060 mg/L LC50 Lepomis macrochirus 96 h | = 2500 mg/L EC50 Desmodesmus subspicatus 72 h | = 83 mg/L EC50 Daphnia magna 48 h = 825 mg/L EC50 Daphnia magna 48 h |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | LC50 >700 mg/l 96h | EC50 >700 mg/l 72h | EC50 >1001 mg/l 48h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Barite | Inorganic compound |
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Crystalline silica (impurity) | Inorganic compound |

| | |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Barite | Product/Substance is inorganic |
| Calcium carbonate | Product/Substance is inorganic |
| Crystalline silica (impurity) | Product/Substance is inorganic |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
Insoluble in water. See component information below.

| Chemical Name | Mobility |
|---|---|
| Barite | Insoluble in water |
| Calcium carbonate | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Barite | Not expected to adsorb on soil |
| Calcium carbonate | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Water-based muds containing mixtures of products listed in Chapters 17 and/or 18 of the IBC Code and the latest MEPC.2/Circular and is permitted to be carried under Annex II of MARPOL and resolution A.673 (16) Offshore Supply Vessel Code.
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Potassium Chloride
Schedule 4

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 16-Mar-2016 |
| **Revision date** | 10-Sep-2019 |
| **Version** | 5 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**SDS no.** PID10482
**Version** 7
**Revision date** 18-Feb-2019
**Supersedes Date:** 09-Oct-2015

# Safety Data Sheet
## ULTRAHIB*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** ULTRAHIB*
**Product code** PID10482

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Shale inhibitor.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 1 Subcategory 1C |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H314 - Causes severe skin burns and eye damage

**Precautionary statements**
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Supplementary precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P363 - Wash contaminated clothing before reuse

**Contains**
Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapors

### Australian statement of hazardous/dangerous nature

Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | - | 9046-10-0 | 60-100 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.

**Ingestion** Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**Skin contact** Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention at once.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing agent suitable for type of surrounding fire.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Keep people away from and upwind of spill/leak. Do not get on skin or clothing. Wash thoroughly after handling. Avoid contact with eyes. Do not breathe vapors or spray mist. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Strong acids |
| **Storage class** | Corrosive storage. |

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Contains no substances with occupational exposure limit values No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** Use eye protection according to EN 166, designed to protect against liquid splashes
Chemical splash goggles and/or face shield

**Hand protection** Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene Rubber
Break through time >480 minutes
Glove thickness >=0.4 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Use respirator with organic vapor protection (A, brown) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | No information available |
| **Odor** | Ammoniacal |
| **Color** | Colorless |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 9.0 - 9.5 | (Neat) |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | > 93 °C / > 200 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 0.993 - 1.023 | |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | 80 - 120 cP | @ 24 °C |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

Corrosive.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Not known.

### 10.4 Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition.

### 10.5 Incompatible materials

Strong acids.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system. Inhaled corrosive substances can lead to a toxic edema of the lungs.

**Eye contact** Causes burns. May cause irreversible damage to eyes.

**Skin contact** Causes severe skin burns.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | 2885 mg/kg ( Rat )<br>OECD 401 | 2979 mg/kg ( Rabbit )<br>OECD 402 | > 0.74 mg/l ( Rat )<br>OECD 403 |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

| | |
|---|---|
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of Exposure** | Skin contact. Eye contact. Inhalation. |
| **Routes of entry** | Skin contact. Inhalation. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | LC50 >700 mg/l 96h | EC50 >700 mg/l 72h | EC50 >1001 mg/l 48h |

### 12.2 Persistence and degradability

Product is not biodegradable. See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not biodegradable |

### 12.3 Bioaccumulative potential

Does not bioaccumulate. See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Does not bioaccumulate |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

.

.

### 14.1. UN number

**UN/ID No. (ADR/RID/ADN/ADG)** UN2735
**UN No. (IMDG/ANTAQ)** UN2735
**UN No. (ICAO/ANAC)** UN2735

### 14.2. UN proper shipping name

AMINES, LIQUID, CORROSIVE, N.O.S. (contains Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups)

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | III |
| **IMDG/ANTAQ Packing group** | III |
| **ICAO/ANAC Packing group** | III |


**14.5 Environmental hazard**
No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 09-Oct-2015 |
| **Revision date** | 18-Feb-2019 |
| **Version** | 7 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D188
**Version** 4
**Revision date** 29-Mar-2021
**Supersedes Date:** 23-Mar-2016

# Safety Data Sheet
## UltraLITE D188

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** UltraLITE D188
**Product code** D188

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
Level 5, 10 Telethon Avenue
Perth WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518, Canada 001 613 996 6666

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

_

**Contains**
Silica, amorphous

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Silica, amorphous | 231-545-4 | 7631-86-9 | <=3 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash skin thoroughly with soap and water. Get medical attention if irritation persists.

**Eye Contact** Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Get medical attention if any discomfort continues.

**4.2. Most important symptoms and effects, both acute and delayed**

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8. Contaminated surfaces will be extremely slippery.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Cover powder spill with plastic sheet or tarp to minimize spreading. Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**
Avoid dust formation. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation. Contaminated surfaces will be extremely slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Avoid heat, flames and other sources of ignition. Protect from moisture

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** NUI = Nuisance dust, TWA 4mg/m³ Respirable Dust, 10mg/m³ Total Dust.

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Silica, amorphous | Not determined | 2mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Silica, amorphous | 10 mg/m³ TWA | Not determined | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Silica, amorphous | 1 mg/m³ MAC<br>2 mg/m³ MAC | 6.0 mg/m³ TWA | Not determined |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Silica, amorphous | Not determined | Not determined | 3 mg/m³ STEL<br>6 mg/m³ STEL<br>1 mg/m³ TWA<br>2 mg/m³ TWA<br>Fibrogenic substance also vitreous, in the form of disintegration aerosol 1177<br>Fibrogenic substance in the form of condensation aerosol, containing >=10% Silicon dioxide 1175, 1176 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Silica, amorphous | Not determined | Not determined | Not determined |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against dusts Tightly fitting safety goggles Safety glasses with side-shields |
| **Hand protection** | Wear gloves according to EN 374 to protect against skin effects from powders<br>Use protective gloves made of: Neoprene Nitrile<br>Frequent change is advisable |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Half mask with a particle filter P2 (European Norm EN 143 = former DIN 3181) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear suitable protective clothing Eye wash and emergency shower must be available at the work place. |
| **Hygiene Measures** | Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use |

**8.2.3 Environmental exposure controls**

| | |
|---|---|
| **Environmental exposure** | Use appropriate containment to avoid environmental contamination See section 6 for more information |

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | White |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability** | Not applicable | |
| **Explosion limits:** | | |
| **Upper explosion limit** | No information available | |
| **Lower explosion limit** | No information available | |
| **Vapor pressure** | No information available | |

| | |
|---|---|
| **Relative Vapor Density** | No information available |
| **Specific gravity** | No information available |
| **Bulk density** | No information available |
| **Water solubility** | Insoluble in water |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **Partition Coefficient (n-octanol/water)** | No information available |
| **Density and/or Relative Density** | 0.35 - 0.41 g/cm³ |
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

### 9.2 Other information

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Avoid dust formation. Avoid heat, flames and other sources of ignition. Protect from moisture.

### 10.5 Incompatible materials

No materials to be especially mentioned.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of dust in high concentration may cause irritation of respiratory system. |
| **Eye contact** | Dust may cause mechanical irritation. |

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Silica, amorphous | = 7900 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit ) | > 2.2 mg/L ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact. Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Silica, amorphous | = 5000 mg/L LC50 Brachydanio rerio 96 h | = 440 mg/L EC50 Pseudokirchneriella subcapitata 72 h | = 7600 mg/L EC50 Ceriodaphnia dubia 48 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Silica, amorphous | Not Applicable - Inorganic chemical. |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Silica, amorphous | Not Applicable - Inorganic chemical. |

### 12.4 Mobility

**Mobility**
The product is insoluble and floats on water.

**Mobility in soil**
No information available.

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

**14.5 Environmental hazard**

**Marine pollutant**
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not applicable |
| **Group number** | Not applicable |

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP) Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |

| | |
|---|---|
| **Supersedes Date:** | 23-Mar-2016 |
| **Revision date** | 29-Mar-2021 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1 |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D168
**Version** 4
**Revision date** 23-Mar-2018
**Supersedes Date:** 19-Feb-2015

# Safety Data Sheet
## UNIFLAC* L D168

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** UNIFLAC* L D168
**Product code** D168

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

No classified ingredients, or those having occupational exposure limits, present above the level of disclosure.

## 4. First Aid Measures

**4.1 First aid measures**

| | |
|---|---|
| **Inhalation** | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult. |
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur. |
| **Eye Contact** | Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

**4.2. Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

**4.3 Indication of any immediate medical attention and special treatment needed**

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
High volume water jet.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of toxic and corrosive gases/vapors Nitrogen oxides (NOx), Sulphur oxides.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Contaminated surfaces will be extremely slippery. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use. If spilled, take caution, as material can cause surfaces to become very slippery.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Provide sufficient air exchange and/or exhaust in work rooms. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Store above freezing temperature Store away from incompatibles, Oxidizing agents |
| **Storage class** | Chemical storage. |
| **Packaging materials** | Use specially constructed containers only. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

| | |
|---|---|
| **Exposure limits** | The product does not contain any hazardous materials with occupational exposure limits established. |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

| | |
|---|---|
| **Eye protection** | Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles |
| **Hand protection** | Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Butyl Neoprene Nitrile<br>Break through time >480 minutes<br>Glove thickness >0.4 mm<br>Be aware that liquid may penetrate the gloves. Frequent change is advisable. |
| **Respiratory protection** | In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. |
| **Skin and body protection** | Wear appropriate personal protective clothing to prevent skin contact Eye wash and emergency shower must be available at the work place. |

**Hygiene Measures** Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

**8.2.3 Environmental exposure controls**

**Environmental exposure** Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | Odorless |
| **Color** | White - Light yellow |
| **Odor threshold** | Not applicable |

| **Property** | **Values** | **Remarks** |
|---|---|---|
| **pH** | 7 | @ 20 °C |
| **pH @ dilution** | 10 g/l | |
| **Melting / freezing point** | 0 °C / 32 °F | |
| **Boiling point/range** | 100 °C / 212 °F | |
| **Flash point** | Not applicable | |
| **Evaporation rate (BuAc =1)** | Similar to water. | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | 2.34 kPa | @ 20 °C |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.06 g/cm3 | @ 20 °C |
| **Bulk density** | No information available | |
| **Relative density** | No information available | |
| **Water solubility** | Miscible with water. | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | 500 °C / 932 °F | |
| **Decomposition temperature** | 260 °C / 500 °F | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | 2000 - 4000 mPa s | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | No information available |
| **Oxidizing properties** | Not applicable |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | -6°C / 21.2 °F |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | 1.06 g/cm³ (20°C) |

**Comments**

The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

### 10.1 Reactivity

No specific reactivity hazards associated with this product.

### 10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

### 10.3 Possibility of Hazardous Reactions

**Hazardous polymerization**
Hazardous polymerization does not occur.

### 10.4 Conditions to avoid

Do not freeze.

### 10.5 Incompatible materials

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

| | |
|---|---|
| **Inhalation** | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| **Eye contact** | May cause slight irritation. |
| **Skin contact** | Prolonged contact may cause redness and irritation. |
| **Ingestion** | Ingestion may cause stomach discomfort. |
| **Unknown acute toxicity** | Not applicable. |

| | |
|---|---|
| **Sensitization** | This product does not contain any components suspected to be sensitizing. |
| **Mutagenic effects** | This product does not contain any known or suspected mutagens. |
| **Carcinogenicity** | This product does not contain any known or suspected carcinogens. |

| | |
|---|---|
| **Reproductive toxicity** | This product does not contain any known or suspected reproductive hazards. |
| **Routes of exposure** | Skin contact. Eye contact. Inhalation. |

| | |
|---|---|
| **Routes of entry** | No route of entry noted. |
| **Specific target organ toxicity - Single exposure** | Not classified |
| **Specific target organ toxicity - Repeated exposure** | Not classified. |
| **Aspiration hazard** | Not applicable. |
| **Other information** | Key literature references and sources for data. See Section 16 for more information. |

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

### 12.2 Persistence and degradability

Biodegradable.

### 12.3 Bioaccumulative potential

Does not bioaccumulate.

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems.

**Mobility in soil**
No information available.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**
Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**
Not regulated

**14.2. UN proper shipping name**
The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**
No

**14.6 Special precautions**
Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not applicable |
| **Group number** | Not applicable |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Muriel Martin Beurel |
| **Supersedes Date:** | 19-Feb-2015 |
| **Revision date** | 23-Mar-2018 |
| **Version** | 4 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**

**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D177
**Version** 9
**Revision date** 26-Jan-2021
**Supersedes Date:** 24-Aug-2018

# Safety Data Sheet
## UNISET-LT D177

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** UNISET-LT D177
**Product code** D177

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards**

| | |
|---|---|
| Substances/mixtures corrosive to metal | Category 1 |

### 2.2 Label elements

**Signal word**
WARNING

H290 - May be corrosive to metals

**Precautionary statements**
P234 - Keep only in original container
P390 - Absorb spillage to prevent material damage
P406 - Store in corrosion resistant container with a resistant inner liner

–

**Contains**
Phosphoric Acid

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Phosphoric Acid | 231-633-2 | 7664-38-2 | 5-<10 |

**Comments**
Note B: Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations.

The product contains other ingredients which do not contribute to the overall classification.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical attention if irritation occurs.

**Eye Contact** Remove contact lenses, if worn. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use water spray, fog, Carbon dioxide ($CO_2$), foam or dry chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Oxides of phosphorus.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

**Hazchem code ADG** 2X

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/precautions** | Ensure adequate ventilation. Keep airborne concentrations below exposure limits. |
| **Storage precautions** | Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight. Store at ambient conditions Protect from freezing Avoid excessive heat for prolonged periods of time. Store away from incompatibles, Strong oxidizing agents Aluminum Carbon steel |
| **Storage class** | Corrosive storage. |
| **Packaging materials** | High density polyethylene (HDPE) drum or can Plastic container |
| **Packaging materials to be avoided** | Do not use carbon steel or aluminum tools or equipment. |

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Phosphoric Acid | 3 mg/m³ STEL<br>1 mg/m³ TWA | 3mg/m³STEL<br>1mg/m³TWA | 3 mg/m³ STEL<br>1 mg/m³ TWA |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |

| | | | |
|---|---|---|---|
| Phosphoric Acid | 3 mg/m³ STEL<br>1 mg/m³ TWA | 1 mg/m³ TWA<br>Skin notation<br>3 mg/m³ STEL | 1 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Phosphoric Acid | Not determined | 1.0 mg/m³ TWA<br>3.0 mg/m³ STEL | 1 mg/m³ TWA |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Phosphoric Acid | 1 mg/m³ TWA | 1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Phosphoric Acid | 1 mg/m³ TWA | 1 mg/m³ TWA<br>3 mg/m³ STEL | 2 mg/m³ STEL<br>1 mg/m³ TWA |

**Notes**
No biological limit allocated

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Tightly fitting safety goggles

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Use protective gloves made of: Nitrile PVA PVC
Break through time >480 minutes
Glove thickness >=0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — When workers are facing concentrations above the exposure limit they must use appropriate certified respirators Respirator with combination filter for vapour/particulate (EN 141) Type A/P3. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Eye wash and emergency shower must be available at the work place. Wear appropriate personal protective clothing to prevent skin contact

**Hygiene Measures** — Wash hands before breaks and immediately after handling the product Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid |
| **Appearance** | Aqueous solution |
| **Odor** | No information available |
| **Color** | Green |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | 1.5 - 1.9 | |
| **pH @ dilution** | Not applicable | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.106 | @20 °C |
| **Bulk density** | No information available | |
| **Relative density** | 1.106 | @ 20°C. |
| **Water solubility** | Soluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Corrosive to Metals.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid excessive heat for prolonged periods of time. Keep away from direct sunlight. Store at ambient conditions. Protect from freezing.

### 10.5 Incompatible materials

Strong oxidizing agents. Carbon steel. Aluminium.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Inhalation** Vapors may irritate throat and respiratory system.

**Eye contact** May cause slight irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Phosphoric Acid | = 1530 mg/kg ( Rat ) | = 2740 mg/kg ( Rabbit ) | > 850 mg/m³ ( Rat ) 1 h |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** This product does not contain any known or suspected carcinogens.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** None known.

**Routes of entry** None known.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Phosphoric Acid | 3 - 3.5 mg/L LC50 Gambusia affinis 96 h | No information available | = 4.6 mg/L EC50 Daphnia magna 12 h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Phosphoric Acid | Readily biodegradable |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Phosphoric Acid | No bioaccumulation potential |

### 12.4 Mobility

**Mobility**
The product is water soluble, and may spread in water systems.

| Chemical Name | Mobility |
|---|---|
| Phosphoric Acid | Miscible in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Phosphoric Acid | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

| | |
|---|---|
| **UN/ID No. (ADR/RID/ADN/ADG)** | UN1760 |
| **UN No. (IMDG/ANTAQ)** | UN1760 |
| **UN No. (ICAO/ANAC)** | UN1760 |

**14.2. UN proper shipping name**

CORROSIVE LIQUID, N.O.S. (contains Phosphoric Acid)

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | 8 |
| **IMDG/ANTAQ Hazard class** | 8 |
| **ICAO/ANAC Hazard class/division** | 8 |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | III |
| **IMDG/ANTAQ Packing group** | III |
| **ICAO/ANAC Packing group** | III |


**14.5 Environmental hazard**

No

**14.6 Special precautions**

| | |
|---|---|
| **Hazard identification no (ADR)** | 80 |

| | |
|---|---|
| **EmS (IMDG)** | F-A, S-B |
| **Emergency Action Code (EAC)** | 2X |
| **Tunnel restriction code** | (E) |
| **Hazchem code ADG** | 2X |

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

Phosphoric Acid
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**ADG Code – Australian Dangerous Goods Code**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Complies |
| **Eurasian Economic Union: Russian Inventory** | |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Poh Yue Cheong |
| **Supersedes Date:** | 24-Aug-2018 |
| **Revision date** | 26-Jan-2021 |
| **Version** | 9 |
| **This SDS has been revised in the following section(s)** | All sections There have been changes with regard to classification. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com

Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 0 |
| Flammability | 1 |
| Physical hazard | 4 |
| PPE | E |

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** SYS00064
**Version** 1
**Revision date** 16-Jul-2021
**Supersedes Date:** None

# Safety Data Sheet
## VERATHERM*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** VERATHERM*
**Product code** SYS00064

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Water based system.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Australia Pty Ltd
ABN: 67 009 214 162
Level 5
10 Telethon Avenue
Perth
WA 6000

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
DANGER

**Hazard Statements**
H315 - Causes skin irritation
H318 - Causes serious eye damage

**Precautionary statements**
P264 - Wash face, hands and any exposed skin thoroughly after handling
P280 - Wear protective gloves and eye/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P332 + P313 - If skin irritation occurs: Get medical advice/attention

**Supplementary precautionary statements**
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Contains**
Calcium carbonate

Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups

2-aminoethanol

Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria

### Australian statement of hazardous/dangerous nature
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Calcium carbonate | 207-439-9 | 471-34-1 | 10-30 |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | - | 9046-10-0 | 1-<3 |
| 2-aminoethanol | 205-483-3 | 141-43-5 | 1-<3 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

**Comments**
The product contains other ingredients which do not contribute to the overall classification.

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

Drilling fluid is a highly complex and variable blend of several proprietary products. Each drilling fluid is designed to meet the drilling requirements of a specific well. During the drilling process the composition and physical properties of the drilling fluid are constantly changing; therefore, a complete disclosure of a particular fluid's composition is impractical.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.

**Skin contact** — Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** — The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** — Please see Section 11. Toxicological Information for further information.

**Ingestion** — Please see Section 11. Toxicological Information for further information.

**Skin contact** — Please see Section 11. Toxicological Information for further information.

**Eye contact** — Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** — Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Use extinguishing media appropriate for surrounding material.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**

None known.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not smoke, eat or drink. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** Because this product is a liquid, the dust-related Workplace Exposure Limits for the components do not apply. No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Calcium carbonate | Not determined | 10mg/m³TWAinhalable dust | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| 2-aminoethanol | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA | 6ppmSTEL<br>15mg/m³STEL<br>3ppmTWA<br>7.5mg/m³TWA | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| 2-aminoethanol | Not determined | 3 ppm TWA<br>Skin notation<br>6 ppm STEL | 3 ppm OEL<br>7.5 mg/m³ OEL |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Calcium carbonate | Not determined | Not determined | 10 mg/m³ TWA |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| 2-aminoethanol | 0.5 mg/m³ MAC | 8.0 mg/m³ TWA<br>3.0 ppm TWA<br>15.0 mg/m³ STEL<br>6.0 ppm STEL | 6 ppm STEL<br>15 mg/m³ STEL<br>3 ppm TWA<br>7.5 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Calcium carbonate | Not determined | Not determined | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |
| 2-aminoethanol | 3 ppm TWA<br>7.5 mg/m³ TWA | 3 ppm TWA<br>6 mg/m³ TWA | 0.5 mg/m³ MAC<br>Skin |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Calcium carbonate | Not determined | 10 mg/m³ TWA | Not determined |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not determined | Not determined | Not determined |

| | | | |
|---|---|---|---|
| 2-aminoethanol | 3 ppm TWA | 8 mg/m³ TWA<br>15 mg/m³ STEL | 3 ppm STEL<br>7.6 mg/m³ STEL<br>Skin<br>1 ppm TWA<br>2.5 mg/m³ TWA |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide mechanical general and/or local exhaust ventilation to prevent release of vapor or mist into work environment.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against liquid splashes Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Nitrile Neoprene
Break through time >480 minutes
Glove thickness >=0.5 mm
Be aware that liquid may penetrate the gloves. Frequent change is advisable.

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Respirator with combination filter for vapour/particulate (EN 141) Type A/P2 At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** — Liquid
**Appearance** — Viscous
**Odor** — Faint
**Color** — White - Brown

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |

| | |
|---|---|
| **pH @ dilution** | No information available |
| **Melting / freezing point** | Not applicable |
| **Boiling point/range** | > 100 °C / > 212 °F |
| **Flash point** | > 100 °C / > 212 °F |
| **Evaporation rate (BuAc =1)** | No information available |
| **Flammability** | Not applicable |
| **Explosion limits:** | |
| **Upper explosion limit** | No information available |
| **Lower explosion limit** | No information available |
| **Vapor pressure** | No information available |
| **Relative Vapor Density** | No information available |
| **Specific gravity** | 1.0 - 2.3 |
| **Bulk density** | No information available |
| **Water solubility** | Miscible with water. |
| **Solubility in other solvents** | No information available |
| **Autoignition temperature** | No information available |
| **Decomposition temperature** | No information available |
| **Kinematic viscosity** | No information available |
| **Dynamic viscosity** | No information available |
| **Partition Coefficient (n-octanol/water)** | No information available |
| **Density and/or Relative Density** | No information available |
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | No information available |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

None known.

**10.5 Incompatible materials**

No materials to be especially mentioned.

**10.6 Hazardous decomposition products**

See Section 5.2.

## 11. Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because this product is a liquid, under normal and recommended use, exposure to Respirable Crystalline Silica will not apply.

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Causes serious eye damage.

**Skin contact** Causes skin irritation. Components of the product may be absorbed into the body through the skin.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Calcium carbonate | = 6450 mg/kg ( Rat ) | No data available | No data available |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | 2885 mg/kg ( Rat ) OECD 401 | 2979 mg/kg ( Rabbit ) OECD 402 | > 0.74 mg/l ( Rat ) OECD 403 |
| 2-aminoethanol | = 1720 mg/kg (Rat) | = 1000 mg/kg (Rabbit) = 1 mL/kg (Rabbit) | > 1.3 mg/l Vapour 6h (Rat) |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Skin contact. Eye contact.

**Routes of entry** Skin contact. Eye contact.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

### 11.2 Information on other hazards

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
See component information below.

**Toxicity to fish**
See component information below.

**Toxicity to daphnia and other aquatic invertebrates**
See component information below.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Calcium carbonate | No information available | No information available | No information available |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | LC50 >700 mg/l 96h | EC50 >700 mg/l 72h | EC50 >1001 mg/l 48h |
| 2-aminoethanol | > 200 mg/L LC50 Oncorhynchus mykiss 96 h<br>= 3684 mg/L LC50 Brachydanio rerio 96 h<br>300 - 1000 mg/L LC50 Lepomis macrochirus 96 h<br>114 - 196 mg/L LC50 Oncorhynchus mykiss 96 h<br>= 227 mg/L LC50 Pimephales promelas 96 h | = 15 mg/L EC50 Desmodesmus subspicatus 72 h | = 65 mg/L EC50 Daphnia magna 48 h |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

See component information below.

| Chemical Name | Persistence and degradability |
|---|---|
| Calcium carbonate | Not Applicable - Inorganic chemical. |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Not biodegradable |
| 2-aminoethanol | Readily biodegradable |
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

See component information below.

| Chemical Name | Bioaccumulation |
|---|---|
| Calcium carbonate | Product/Substance is inorganic |
| Reaction products of propane-1,2-diol, propoxylated by amination of the terminal hydroxyl groups | Does not bioaccumulate |
| 2-aminoethanol | Does not bioaccumulate log Kow -1.91 |
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
The product is miscible with water. May spread in water systems. See component information below.

| Chemical Name | Mobility |
|---|---|
| Calcium carbonate | Insoluble in water |
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Calcium carbonate | Not expected to adsorb on soil |
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Other adverse effects

None known.

### 12.6 Other information.

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken for local recycling, recovery or waste disposal.

## 14. Transport information

### 14.1. UN number
Not regulated

### 14.2. UN proper shipping name
The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)
**ADR/RID/ADN/ADG Hazard class** Not regulated
**IMDG/ANTAQ Hazard class** Not regulated
**ICAO/ANAC Hazard class/division** Not regulated

### 14.4 Packing group
**ADR/RID/ADN/ADG Packing group** Not regulated
**IMDG/ANTAQ Packing group** Not regulated
**ICAO/ANAC Packing group** Not regulated

### 14.5 Environmental hazard
No

**14.6 Special precautions**
Not applicable

**14.7 Maritime transport in bulk according to IMO instruments**
Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**

2-aminoethanol
Schedule 4
Schedule 6
Schedule 5

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Does not comply |
| **Philippines (PICCS)** | Does not comply |
| **Japan (ENCS)** | Does not comply |
| **China (IECSC)** | Does not comply |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Does not comply |
| **New Zealand (NZIoC)** | Does not comply |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Revision date** | 16-Jul-2021 |
| **Version** | 1 |
| **This SDS has been revised in the following section(s)** | New issue. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information

National occupational exposure limits

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** PID2234
**Version** 2
**Revision date** 19-Mar-2019
**Supersedes Date:** 07-Jun-2016

# Safety Data Sheet
## WALNUT NUTPLUG*

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** WALNUT NUTPLUG*
**Product code** PID2234

**Synonyms** WALNUT NUT PLUG* FINE, WALNUT NUT PLUG* COARSE

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Lost circulation material.

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
M-I Australia Pty Ltd
ABN: 67 009 214 162
Level 5
256 St. George Tce
Perth
WA 6000
T = +61 08 9440 2900
F = +61 08 9322 3080
+47 51577424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards** Not classified

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
None

**Hazard Statements**
This product is not classified as hazardous therefore no (H) hazard statements assigned.

**Precautionary statements**
This product is not classified as hazardous therefore has no (P) precautionary statements assigned.

-

**Contains**
Polysaccharide

Crystalline silica (impurity)

### 2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Combustible dust

**Australian statement of hazardous/dangerous nature**
Classified as Non-Hazardous according to the criteria of NOHSC.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

### 3.1 Substances

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Cellulose | Listed | Proprietary | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | <1 |

### 3.2 Mixtures

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

### 4.1 First aid measures

**Inhalation** — If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Ingestion** — Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

**Skin contact** — Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

**Eye Contact** — Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

**General advice** The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

**Symptoms**

**Inhalation** Please see Section 11. Toxicological Information for further information.

**Ingestion** Please see Section 11. Toxicological Information for further information.

**Skin contact** Please see Section 11. Toxicological Information for further information.

**Eye contact** Please see Section 11. Toxicological Information for further information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water Fog, Alcohol Foam, $CO_2$, Dry Chemical.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
Dust may form explosive mixture in air.

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating gases and vapors

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Take precautionary measures against static discharges. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid dust formation.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Take precautionary measures against static discharges. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from open flames, hot surfaces and sources of ignition Avoid contact with: Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Polysaccharide | 10 mg/m³ TWA | 10mg/m³TWAinhalable dust | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |
| **Chemical Name** | **India** | **Indonesian** | **Japan** |
| Polysaccharide | Not determined | 10 mg/m³ TWA | Not determined |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | Not determined |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Polysaccharide | 2 mg/m³ MAC | Not determined | 10 mg/m³ TWA |
| Crystalline silica (impurity) | 1 mg/m³ MAC | Not determined | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Polysaccharide | 10 mg/m³ TWA | Not determined | 10 mg/m³ MAC |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL |

| | | | |
|---|---|---|---|
| | | | 1 mg/m³ TWA<br>Fibrogenic substance glass;regulated under Quartz 1123, 1124 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Polysaccharide | Not determined | 10 mg/m³ TWA<br>5 mg/m³ TWA<br>20 mg/m³ STEL | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Mechanical ventilation or local exhaust ventilation is required.

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Safety glasses with side-shields Tightly fitting safety goggles

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Use protective gloves made of: Neoprene Nitrile Frequent change is advisable

**Respiratory protection** — No protective equipment is needed under normal use conditions In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

**Physical state** — Solid
**Appearance** — No information available
**Odor** — Odorless
**Color** — Light brown
**Odor threshold** — Not applicable

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | No information available | |
| **Melting / freezing point** | No information available | |
| **Boiling point/range** | No information available | |
| **Flash point** | 193 °C / 380 °F | PMCC |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 1.1 - 1.4 | @ 20 °C |
| **Bulk density** | 577-641 kg/m³/36-40 lb/ft3 | |
| **Relative density** | No information available | |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | Not applicable | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | Not determined | |

**Explosive properties** Suspended dust may present a dust explosion hazard
**Oxidizing properties** None known.

**9.2 Other information**

**Pour point** No information available
**Molecular weight** No information available
**VOC content(%)** None
**Density** No information available

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

Dust may form explosive mixture in air.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static charges.

**10.5 Incompatible materials**

Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Polysaccharide | > 5 g/kg ( Rat ) | > 2 g/kg ( Rabbit ) | > 5800 mg/m³ ( Rat ) 4 h |
| Crystalline silica (impurity) | = 500 mg/kg ( Rat ) | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** This product does not contain any known or suspected reproductive hazards.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Polysaccharide | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
See component information below.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

**12.6 Other adverse effects.**

None known.

**12.7 Other information**

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

**13.1 Waste treatment methods**

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

**14.1. UN number**

Not regulated

**14.2. UN proper shipping name**

The product is not covered by international regulation on the transport of dangerous goods

**14.3 Hazard class(es)**

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

**14.4 Packing group**

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

**14.5 Environmental hazard**

No

**14.6 Special precautions**

Not applicable

**14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code**

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

| | |
|---|---|
| **New Zealand Hazard Classification** | Not classified |
| **HSNO approval no.** | Not required |
| **Group number** | Not required |

**National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC: 2011 (2003)].**

**National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004) 3rd Edition].**

**National Occupational Health and Safety Commission's Exposure Standards for Atmospheric Contaminants in the occupational Environment [NOHSC:1003 (1995)].**

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse |
| **Supersedes Date:** | 07-Jun-2016 |
| **Revision date** | 19-Mar-2019 |
| **Version** | 2 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. Updated according to GHS/CLP. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |
| Flammability | 1 |
| Physical hazard | 0 |
| PPE | E |

*A mark of M-I L.L.C., a Schlumberger Company

**Disclaimer**
**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**
**This Document is Confidential and Proprietary. Unless Otherwise Marked, It is an Uncontrolled Copy.**

**SDS no.** D157
**Version** 8
**Revision date** 21-Aug-2020
**Supersedes Date:** 22-Jan-2020

# Safety Data Sheet
## Weighting Agent D157

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Product name** Weighting Agent D157
**Product code** D157

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Recommended Use** Used as a cementing additive in oilfield applications

**Uses advised against** Consumer use

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
Schlumberger Oilfield Australia Pty Ltd
ABN: 74 002 459 225
ACN: 002 459 225
256 St. Georges Terrace, Perth WA 6000
+47 5157 7424

SDS@slb.com

### 1.4 Emergency Telephone Number

**Emergency telephone** - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 595 3518

## 2. Hazards Identification

### 2.1 Classification of the substance or mixture

**GHS Classification**

**Health hazards**

| | |
|---|---|
| Reproductive toxicity | Category 2 |

**Environmental hazards** Not classified

**Physical Hazards** Not classified

### 2.2 Label elements

**Signal word**
WARNING

**Hazard Statements**
H361 - Suspected of damaging fertility or the unborn child

**Precautionary statements**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

-

**Contains**
Trimanganese tetradioxide

Crystalline silica (impurity)

**2.3 Other hazards**

Not classified as PBT/vPvB by current EU criteria

**Australian statement of hazardous/dangerous nature**
Classified as Hazardous according to the criteria of NOHSC.
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

## 3. Composition/information on Ingredients

**3.1 Substances**

| Chemical Name | EC No | CAS No | Weight-% |
|---|---|---|---|
| Trimanganese tetradioxide | 215-266-5 | 1317-35-7 | 60-100 |
| Crystalline silica (impurity) | 238-878-4 | 14808-60-7 | 1-<3 |

**3.2 Mixtures**

Not applicable

**Comments**
This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. IARC Monographs, Vol. 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or cristobalite from occupational sources causes cancer in humans. IARC Classification Group I.

## 4. First Aid Measures

**4.1 First aid measures**

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

| | |
|---|---|
| **Ingestion** | Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur. |
| **Skin contact** | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation persists. |
| **Eye Contact** | Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses, if worn. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues. |

### 4.2. Most important symptoms and effects, both acute and delayed

| | |
|---|---|
| **General advice** | The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible. |
| **Symptoms** | |
| **Inhalation** | Please see Section 11. Toxicological Information for further information. |
| **Ingestion** | Please see Section 11. Toxicological Information for further information. |
| **Skin contact** | Please see Section 11. Toxicological Information for further information. |
| **Eye contact** | Please see Section 11. Toxicological Information for further information. |

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician** Treat symptomatically.

## 5. Fire-Fighting Measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Water spray, dry chemical, carbon dioxide ($CO_2$), or foam.

**Extinguishing media which must not be used for safety reasons**
None known.

### 5.2. Special hazards arising from the substance or mixture

**Unusual fire and explosion hazards**
None known.

**Hazardous combustion products**
Fire or high temperatures create: Carbon oxides (COx).

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
As in any fire, wear self-contained breathing apparatus and full protective gear.

**Special Fire-Fighting Procedures**
Containers close to fire should be removed immediately or cooled with water.

## 6. Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

### 6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

**Environmental exposure controls**
Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading.

**Methods for cleaning up**
Avoid generating or breathing dust. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water.

### 6.4 Reference to other sections

See section 13 for more information.

## 7. Handling and Storage

### 7.1 Precautions for safe handling

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Avoid handling causing generation of dust. Not to be used by pregnant workers and workers who have recently given birth or who are breastfeeding.

**Hygiene Measures**
Use good work and personal hygiene practices to avoid exposure. Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing Do not eat, drink or smoke when using this product

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures/precautions** Ensure adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. Keep airborne concentrations below exposure limits.

**Storage precautions** Keep containers tightly closed in a dry, cool and well-ventilated place Protect from moisture Avoid contact with: Acids Oxidizing agents

**Storage class** Chemical storage.

**Packaging materials** Use specially constructed containers only.

## 8. Exposure Controls/Personal Protection

### 8.1 Control parameters

**Exposure limits** No biological limit allocated

**Component Information**

| Chemical Name | Arabic | Australia | Egypt |
|---|---|---|---|
| Trimanganese tetradioxide | Not determined | 1mg/m³TWA | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | 0.1mg/m³TWArespirable dust | Not determined |

| Chemical Name | India | Indonesian | Japan |
|---|---|---|---|
| Trimanganese tetradioxide | Not determined | Not determined | 0.2 mg/m³ ACL<br>0.2 mg/m³ OEL |
| Crystalline silica (impurity) | Not determined | 0.1 mg/m³ TWA | 0.03 mg/m³ OEL |
| **Chemical Name** | **Kazakhstan** | **Kuwait** | **New Zealand** |
| Trimanganese tetradioxide | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 1 mg/m³ MAC | 0.1 mg/m³ TWA | 0.1 mg/m³ TWA<br>Confirmed carcinogen |
| **Chemical Name** | **Malaysia** | **Philippines** | **Russia** |
| Trimanganese tetradioxide | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.1 mg/m³ TWA | Not determined | 3 mg/m³ STEL<br>1 mg/m³ TWA<br>Fibrogenic substance 1177, 1178 |
| **Chemical Name** | **Thailand** | **Vietnam** | **Turkey** |
| Trimanganese tetradioxide | Not determined | Not determined | Not determined |
| Crystalline silica (impurity) | 0.025 mg/m³ TWA | Not determined | Not determined |

### 8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

**Engineering Controls**
Ensure adequate ventilation Provide appropriate exhaust ventilation at places where dust is formed Keep airborne concentrations below exposure limits

**Personal protective equipment**

**Eye protection** — Use eye protection according to EN 166, designed to protect against powders and dusts Tightly fitting safety goggles Safety glasses with side-shields

**Hand protection** — Wear gloves according to EN 374 to protect against skin effects from powders Impervious gloves made of: Neoprene Nitrile PVC Frequent change is advisable

**Respiratory protection** — In case of insufficient ventilation wear suitable respiratory equipment Suitable mask with particle filter P3 (European Norm 143) At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

**Skin and body protection** — Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

**Hygiene Measures** — Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use

### 8.2.3 Environmental exposure controls

**Environmental exposure** — Use appropriate containment to avoid environmental contamination See section 6 for more information

## 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Physical state** | Solid |
| **Appearance** | Powder |
| **Odor** | Odorless |
| **Color** | Red brown |
| **Odor threshold** | Not applicable |

| Property | Values | Remarks |
|---|---|---|
| **pH** | No information available | |
| **pH @ dilution** | 7-10 | 5g/50ml H2O |
| **Melting / freezing point** | 1550-1650° C / 2822-3002° F | |
| **Boiling point/range** | No information available | |
| **Flash point** | No information available | |
| **Evaporation rate (BuAc =1)** | No information available | |
| **Flammability (solid, gas)** | Not applicable | |
| **Flammability Limit in Air** | | |
| **Upper flammability limit** | Not applicable | |
| **Lower flammability limit** | Not applicable | |
| **Vapor pressure** | No information available | |
| **Vapor density** | No information available | |
| **Specific gravity** | 4.7 - 4.9 g/cm³ | |
| **Bulk density** | No information available | |
| **Relative density** | 0.97-1.01 kg/cm3 | @ 20°C. |
| **Water solubility** | Insoluble in water | |
| **Solubility in other solvents** | No information available | |
| **Autoignition temperature** | No information available | |
| **Decomposition temperature** | No information available | |
| **Kinematic viscosity** | No information available | |
| **Dynamic viscosity** | No information available | |
| **log Pow** | No information available | |

| | |
|---|---|
| **Explosive properties** | Not applicable |
| **Oxidizing properties** | None known. |

**9.2 Other information**

| | |
|---|---|
| **Pour point** | No information available |
| **Molecular weight** | No information available |
| **VOC content(%)** | None |
| **Density** | No information available |

**Comments**
The data listed above are typical physical and chemical properties and should not be construed as product specification.

## 10. Stability and Reactivity

**10.1 Reactivity**

No specific reactivity hazards associated with this product.

**10.2 Chemical stability**

Stable under normal temperature conditions and recommended use.

**10.3 Possibility of Hazardous Reactions**

**Hazardous polymerization**
Hazardous polymerization does not occur.

**10.4 Conditions to avoid**

Avoid dust formation. Protect from moisture.

### 10.5 Incompatible materials

Acids. Oxidizing agents.

### 10.6 Hazardous decomposition products

See Section 5.2.

## 11. Toxicological Information

### 11.1 Information on toxicological effects

**Acute toxicity**

**Product information** This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis.

**Inhalation** Inhalation of dust in high concentration may cause irritation of respiratory system.

**Eye contact** Dust may cause mechanical irritation.

**Skin contact** Repeated exposure may cause skin dryness or cracking.

**Ingestion** Ingestion may cause stomach discomfort.

**Unknown acute toxicity** Not applicable.

**Toxicology data for the components**

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Trimanganese tetradioxide | No data available | No data available | No data available |
| Crystalline silica (impurity) | No data available | No data available | No data available |

**Sensitization** This product does not contain any components suspected to be sensitizing.

**Mutagenic effects** This product does not contain any known or suspected mutagens.

**Carcinogenicity** Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

**Reproductive toxicity** Suspected of damaging fertility or the unborn child.

**Routes of Exposure** Inhalation.

**Routes of entry** Inhalation.

**Specific target organ toxicity - Single exposure** Not classified

**Specific target organ toxicity - Repeated exposure** Not classified.

**Aspiration hazard** Not applicable.

**Other information** Key literature references and sources for data. See Section 16 for more information.

## 12. Ecological Information

### 12.1 Toxicity

The product component(s) are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Large amounts will affect pH and harm aquatic organisms

**Toxicity to algae**
This product is not considered toxic to algae.

**Toxicity to fish**
This product is not considered toxic to fish.

**Toxicity to daphnia and other aquatic invertebrates**
This product is not considered toxic to invertebrates.

**Toxicology data for the components**

| Chemical Name | Toxicity to fish | Toxicity to algae | Toxicity to daphnia and other aquatic invertebrates |
|---|---|---|---|
| Trimanganese tetradioxide | No information available | No information available | No information available |
| Crystalline silica (impurity) | LC50 Danio rerio (zebra fish) : > 10000 mg/l 96h | EC50: > 1000 mg/l 72h | LC50 Daphnia manga (Water flea): > 10000 mg/l 24h |

### 12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

| Chemical Name | Persistence and degradability |
|---|---|
| Crystalline silica (impurity) | Inorganic compound |

### 12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

| Chemical Name | Bioaccumulation |
|---|---|
| Crystalline silica (impurity) | Product/Substance is inorganic |

### 12.4 Mobility

**Mobility**
Insoluble in water.

| Chemical Name | Mobility |
|---|---|
| Crystalline silica (impurity) | Insoluble in water |

**Mobility in soil**
No information available.

| Chemical Name | Mobility in soil |
|---|---|
| Crystalline silica (impurity) | Not expected to adsorb on soil |

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

### 12.6 Other adverse effects.

None known.

### 12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

## 13. Disposal considerations

### 13.1 Waste treatment methods

| | |
|---|---|
| **Waste from residues/unused products** | Dispose of in accordance with local regulations. |
| **Contaminated packaging** | Empty containers should be taken for local recycling, recovery or waste disposal. |

## 14. Transport information

### 14.1. UN number

Not regulated

### 14.2. UN proper shipping name

The product is not covered by international regulation on the transport of dangerous goods

### 14.3 Hazard class(es)

| | |
|---|---|
| **ADR/RID/ADN/ADG Hazard class** | Not regulated |
| **IMDG/ANTAQ Hazard class** | Not regulated |
| **ICAO/ANAC Hazard class/division** | Not regulated |

### 14.4 Packing group

| | |
|---|---|
| **ADR/RID/ADN/ADG Packing group** | Not regulated |
| **IMDG/ANTAQ Packing group** | Not regulated |
| **ICAO/ANAC Packing group** | Not regulated |

### 14.5 Environmental hazard

No

**Marine pollutant**

No

### 14.6 Special precautions

Not applicable

### 14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

## 15. Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**This safety data sheet complies with the requirements of:**
**The Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

**Australian Standard for the Uniform Scheduling of Drugs and Poisons**
No poisons schedule number allocated

**Safe Work Australia.**

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).**

**Not classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG)**

**Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 [P.U.(A) 310/2013] (CLASS Regulations)**
**The Industry Code of Practice on Chemical Classification and Hazard Communication 2014 [P.U. (B) 128/2014] (ICOP)**

**International inventories**

| | |
|---|---|
| **USA (TSCA)** | Complies |
| **Canada (DSL)** | Complies |
| **Philippines (PICCS)** | Complies |
| **Japan (ENCS)** | Complies |
| **China (IECSC)** | Complies |
| **Australia (AICS)** | Complies |
| **Korean (KECL)** | Complies |
| **New Zealand (NZIoC)** | Complies |

## 16. Other Information

| | |
|---|---|
| **Prepared by** | Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Sandra McWilliam |
| **Supersedes Date:** | 22-Jan-2020 |
| **Revision date** | 21-Aug-2020 |
| **Version** | 8 |
| **This SDS has been revised in the following section(s)** | All sections No changes with regard to classification have been made. |

**Key literature references and sources for data**
www.ChemADVISOR.com
Supplier
National Chemical Inventories
National regulatory information
National occupational exposure limits

**HMIS classification**

| | |
|---|---|
| Health | 1* |

| | |
|---|---|
| Flammability | 0 |
| Physical hazard | 0 |
| PPE | E |

**Disclaimer**

**The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.**