

1. IDENTIFICATION

| | |
|----------------------------|--|
| Product Name | Polyethylene glycol monooleate |
| Other Names | ALKAMULS A; Glycols, polyethylene, monooleate; Oleic acid, ethoxylated; PEG 6 oleate; Polyoxyethylene monooleate |
| Uses | Emulsifier; Manufacture of chemical products. |
| Chemical Family | No Data Available |
| Chemical Formula | (C ₂ H ₄ O) _n C ₁₈ H ₃₄ O ₂ |
| Chemical Name | Poly(oxy-1,2-ethanediy), .alpha.-(1-oxo-9-octadecenyl)-.omega.-hydroxy-, (Z)- |
| Product Description | No Data Available |

Contact Details of the Supplier of this Safety Data Sheet

| Organisation | Location | Telephone |
|-------------------------|--|-----------------|
| Redox Pty Ltd | 2 Swettenham Road Minto NSW 2566 Australia | +61-2-97333000 |
| Redox Pty Ltd | 11 Mayo Road Wiri Auckland 2104 New Zealand | +64-9-2506222 |
| Redox Inc. | 3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA | +1-424-675-3200 |
| Redox Chemicals Sdn Bhd | Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia | +60-3-5614-2111 |

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

| Organisation | Location | Telephone |
|----------------------------|--------------|--|
| Poisons Information Centre | Westmead NSW | 1800-251525 131126 |
| Chemcall | Australia | 1800-127406 +64-4-9179888 |
| Chemcall | Malaysia | +64-4-9179888 |
| Chemcall | New Zealand | 0800-243622 +64-4-9179888 |
| National Poisons Centre | New Zealand | 0800-764766 |
| CHEMTREC | USA & Canada | 1-800-424-9300 CN723420 +1-703-527-3887 |

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Signal Word None

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

| | | |
|----------------|-------------|---|
| Health Hazards | 6.3B | Substances that are mildly irritating to the skin |
| | 6.4A | Substances that are irritating to the eye |

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

| Chemical Entity | Formula | CAS Number | Proportion |
|-----------------|---------|------------|----------------|
| 1,4-Dioxane | C4H8O2 | 123-91-1 | >=0.1 - <0.3 % |

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get medical advice/attention if you feel unwell.

Eye IF IN EYES: Flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. If respiratory symptoms persist, get medical advice/attention.

Advice to Doctor Treat symptomatically.

Medical Conditions Aggravated by Exposure No information available.

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Flammability Conditions Combustible liquid; May burn but does not ignite readily.

Extinguishing Media Use dry chemical, Carbon dioxide (CO₂), foam or water spray for extinction - Do not use high volume water jet (a solid water stream may scatter and spread fire).

Fire and Explosion Hazard Does not present any particular risk in the event of a fire. Containers may explode when heated.
Fire may produce irritating and/or toxic fumes, including oxides of Carbon.

Hazardous Products of Combustion**Special Fire Fighting Instructions**

Collect contaminated fire extinguishing water separately; This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Personal Protective Equipment

Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).

Flash Point

>100 °C [closed cup]

Lower Explosion Limit

No Data Available

Upper Explosion Limit

No Data Available

Auto Ignition Temperature

No Data Available

Hazchem Code

No Data Available

6. ACCIDENTAL RELEASE MEASURES**General Response Procedure**

Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material - Material can create slippery conditions. Avoid breathing vapours and contact with eyes, skin and clothing.

Clean Up Procedures

Absorb with earth, sand or other non-combustible material and transfer to a suitable, properly labelled container for disposal (see SECTION 13).

Containment

Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.

Decontamination

Clean contaminated surface thoroughly. Recover the cleaning water for subsequent disposal.

Environmental Precautionary Measures

Prevent entry into drains and waterways.

Evacuation Criteria

Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

Personal Precautionary Measures

Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE**Handling**

Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/spray and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Combustible liquid: Avoid excessive heat and all sources of ignition - No smoking. Take precautionary measures against static discharge. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers tightly closed when not in use. Keep away from heat and all sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).

Container

Keep in the original container or recommended packaging material(s), i.e. Plastic.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**General**

No value assigned for this specific material by Safe Work Australia.

COMPONENT: 1,4-Dioxane (CAS No. 123-91-1):

- Safe Work Australia Exposure Standard: TWA = 10 ppm (36 mg/m³); Suspected human carcinogen (Carc. 2); Absorption through the skin may be a significant source of exposure (Sk).

- New Zealand WES: TWA = 25 ppm (90 mg/m³); Skin absorption (skin); Confirmed carcinogen (6.7A).

Exposure Limits

No Data Available

Biological Limits

No information available.

Engineering Measures

Natural ventilation should be adequate under normal use conditions. Apply technical measures to comply with the occupational exposure limits.

Personal Protection Equipment

- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or if an inhalation risk exists. Recommended: Organic vapour respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses.

- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Neoprene.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.

Special Hazards Precautions No information available.

Work Hygienic Practices Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Physical State | Liquid |
| Appearance | Liquid |
| Odour | Very faint |
| Colour | Amber-yellow |
| pH | 6 - 8 (5% aqueous solution) |
| Vapour Pressure | No Data Available |
| Relative Vapour Density | No Data Available |
| Boiling Point | No Data Available |
| Melting Point | No Data Available |
| Freezing Point | <0 °C |
| Solubility | Soluble in organic solvents, aromatic hydrocarbons - Dispersible in water |
| Specific Gravity | ca. 1 |
| Flash Point | >100 °C [closed cup] |
| Auto Ignition Temp | No Data Available |
| Evaporation Rate | No Data Available |
| Bulk Density | No Data Available |
| Corrosion Rate | No Data Available |
| Decomposition Temperature | No Data Available |
| Density | ca. 1 g/cm ³ |
| Specific Heat | No Data Available |
| Molecular Weight | No Data Available |
| Net Propellant Weight | No Data Available |
| Octanol Water Coefficient | No Data Available |
| Particle Size | No Data Available |
| Partition Coefficient | No Data Available |
| Saturated Vapour Concentration | No Data Available |
| Vapour Temperature | No Data Available |
| Viscosity | ca. 100 mPa.s (@ 20 °C) |
| Volatile Percent | No Data Available |
| VOC Volume | No Data Available |
| Additional Characteristics | No information available. |
| Potential for Dust Explosion | Not applicable. |
| Fast or Intensely Burning Characteristics | No information available. |
| Flame Propagation or Burning Rate of Solid Materials | No information available. |
| Non-Flammables That Could Contribute Unusual Hazards to a Fire | No information available. |
| Properties That May Initiate or Contribute to Fire Intensity | May burn but does not ignite readily. |
| Reactions That Release Gases or Vapours | Combustion/thermal decomposition may produce irritating and/or toxic fumes, including oxides of Carbon. |

Release of Invisible Flammable Vapours and Gases No information available.

10. STABILITY AND REACTIVITY

General Information No information available.

Chemical Stability Stable at room temperature, under normal conditions.

Conditions to Avoid Avoid excessive heat and all sources of ignition.

Materials to Avoid Incompatible/reactive with strong oxidising agents.

Hazardous Decomposition Products Combustion/thermal decomposition may produce irritating and/or toxic fumes, including oxides of Carbon.

Hazardous Polymerisation No information available.

11. TOXICOLOGICAL INFORMATION

General Information Information on possible routes of exposure:
- Ingestion: No adverse effects expected.
- Eye contact: May cause eye irritation.
- Skin contact: May cause mild skin irritation.
- Inhalation: Breathing mist/aerosols may cause respiratory tract irritation.
Chronic effects: No information available. COMPONENT: 1,4-Dioxane (CAS No. 123-91-1) is classified by the IARC Monographs as Possibly carcinogenic to humans (Group 2B).

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity No information available.

Persistence/Degradability No information available.

Mobility No information available.

Environmental Fate Prevent entry into drains and waterways.

Bioaccumulation Potential No information available.

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

| | |
|-----------------------------|--|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable |
| Subsidiary Risk(s) | No Data Available No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| Comments | NON-DANGEROUS GOODS: Not regulated for LAND transport. |

Land Transport (Malaysia)

ADR Code

| | |
|-----------------------------|--|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | No Data Available |
| Subsidiary Risk(s) | No Data Available No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| Comments | NON-DANGEROUS GOODS: Not regulated for LAND transport. |

Land Transport (New Zealand)

NZS5433

| | |
|-----------------------------|--|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | No Data Available |
| Subsidiary Risk(s) | No Data Available No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| Comments | NON-DANGEROUS GOODS: Not regulated for LAND transport. |

Land Transport (United States of America)

US DOT

| | |
|-----------------------------|--|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | No Data Available |
| Subsidiary Risk(s) | No Data Available No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| Comments | NON-DANGEROUS GOODS: Not regulated for LAND transport. |

Sea Transport

IMDG Code

| | |
|-----------------------------|--------------------------------|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | No Data Available |

| | |
|---------------------------|---|
| Subsidiary Risk(s) | No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| EMS | No Data Available |
| Marine Pollutant | No |
| Comments | NON-DANGEROUS GOODS: Not regulated for SEA transport. |

Air Transport

IATA DGR

| | |
|-----------------------------|---|
| Proper Shipping Name | Polyethylene glycol monooleate |
| Class | No Data Available |
| Subsidiary Risk(s) | No Data Available |
| UN Number | No Data Available |
| Hazchem | No Data Available |
| Pack Group | No Data Available |
| Special Provision | No Data Available |
| Comments | NON-DANGEROUS GOODS: Not regulated for AIR transport. |

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

| | |
|---------------------------------------|---|
| Dangerous Goods Classification | NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code) |
|---------------------------------------|---|

15. REGULATORY INFORMATION

| | |
|--------------------------------|-------------------|
| General Information | No Data Available |
| Poisons Schedule (Aust) | Not Scheduled |

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

| | |
|----------------------|-----------|
| Approval Code | HSR003170 |
|----------------------|-----------|

National/Regional Inventories

| | |
|--------------------------|----------------|
| Australia (AICS) | Listed |
| Canada (DSL) | Not Determined |
| Canada (NDSL) | Not Determined |
| China (IECSC) | Not Determined |
| Europe (EINECS) | Not Determined |
| Europe (REACH) | Not Determined |
| Japan (ENCS/METI) | Not Determined |

| | |
|---|----------------|
| Korea (KECI) | Not Determined |
| Malaysia (EHS Register) | Not Determined |
| New Zealand (NZIoC) | Listed |
| Philippines (PICCS) | Not Determined |
| Switzerland (Giftliste 1) | Not Determined |
| Switzerland (Inventory of Notified Substances) | Not Determined |
| Taiwan (NCSR) | Not Determined |
| USA (TSCA) | Not Determined |

16. OTHER INFORMATION

| | |
|------------------------------|--|
| Related Product Codes | SUFOLA1000, SUFOLA3000 |
| Revision | 2 |
| Revision Date | 08 Dec 2017 |
| Key/Legend | <p>< Less Than > Greater Than AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ Milligrams per Cubic Metre Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present. mm Millimetre mmH₂O Millimetres of Water mPa.s Millipascals per Second N/A Not Applicable NIOSH National Institute for Occupational Safety and Health NOHSC National Occupational Health and Safety Commission OECD Organisation for Economic Co-operation and Development Oz Ounce</p> |

PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight