SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name: 2-Mercaptoethanol (BME)
Material: 1122450, 1122449, 1017944, 1068852, 1088828, 1086429, 1104362, 1093708, 1086428, 1021562, 1024822, 1021565, 1024821, 1021564, 1028369, 1033065, 1028386, 1028385, 1033120

Use: Chemical intermediate

Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local: See Company Address

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

Classification of the substance or mixture
GHS Classification and labelling according to JIS Z7252-2014 and JIS Z7253-2012 (GHS 2011)

Classification:
- Flammable liquids, Category 4
- Acute toxicity, Category 3, Oral
- Acute toxicity, Category 3, Inhalation

SDS Number: 100000013444
2-Mercaptoethanol (BME)

Acute toxicity, Category 2, Dermal
Skin corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2
Skin sensitization, Category 1
Reproductive toxicity, Category 2
Specific target organ toxicity - single exposure, Category 2,
Central nervous system
Specific target organ toxicity - repeated exposure, Category 2,
Liver
Short-term (acute) aquatic hazard, Category 1
Long-term (chronic) aquatic hazard, Category 1

Labeling

Symbol(s): 

Signal Word: Danger

Hazard Statements:
H227: Combustible liquid.
H301 + H331: Toxic if swallowed or if inhaled.
H310: Fatal in contact with skin.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H361: Suspected of damaging fertility or the unborn child.
H371: May cause damage to organs (Central nervous system).
H373: May cause damage to organs (Liver) through prolonged or repeated exposure.
H410: Very toxic 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.
P210: Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash 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:
P302 + P352: IF ON SKIN: Wash with plenty of water.
P302 + P352 + P310: IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/doctor.
P304 + P340 + P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
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 + P311: IF exposed or concerned: Call a POISON CENTER/doctor.
P333 + P313: If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313: If eye irritation persists: Get medical advice/ attention.
P361 + P364: Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391: Collect spillage.

Storage:
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
Disposal:
P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

Synonyms: beta-Mercaptoethanol
BME
Thioglycol
2, Mercaptoethanol
2-Hydroxyethyl Mercaptan
2-Mercaptoethanol Pure

Molecular formula: HSCH2CH2OH

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>ENCS/ISHL number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol</td>
<td>60-24-2</td>
<td>99 % - 100%</td>
<td>2-458</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.

If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact: Take victim immediately to hospital. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye

SDS Number: 100000013444
If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point : 68.3 °C (154.9 °F)
Method: Tag closed cup

Autoignition temperature : 295 °C (563 °F)
estimated

Suitable extinguishing media : Carbon dioxide (CO2).

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : 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. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

SECTION 6: Accidental release measures

Personal precautions : Use personal protective equipment.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Contain spillage, and then collect 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). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage
SAFETY DATA SHEET

2-Mercaptoethanol (BME)

Version 1.9

Advice on safe handling: Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion: Do not spray on an open flame or any other incandescent material. Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers: Prevent unauthorized access. No smoking. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use: Chemical intermediate

SECTION 8: Exposure controls/personal protection

Engineering measures

Adequate ventilation to control airborne 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: Full-Face Supplied-Air Respirator. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, 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.

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. Flame retardant protective clothing. Personal protection through wearing a tightly closed chemical protection suit and a self-contained breathing apparatus. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals.

Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
</tr>
<tr>
<td>Form : Liquid</td>
</tr>
<tr>
<td>Physical state : Liquid</td>
</tr>
<tr>
<td>Color : Water white</td>
</tr>
<tr>
<td>Odor : Repulsive</td>
</tr>
<tr>
<td><strong>Safety data</strong></td>
</tr>
<tr>
<td>Flash point : 68.3 °C (154.9 °F)</td>
</tr>
<tr>
<td>Method : Tag closed cup</td>
</tr>
<tr>
<td>Lower explosion limit : 2.3 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit : 18 %(V)</td>
</tr>
<tr>
<td>Oxidizing properties : No</td>
</tr>
<tr>
<td>Autoignition temperature : 295 °C (563 °F) estimated</td>
</tr>
<tr>
<td>Molecular formula : HSCH₂CH₂OH</td>
</tr>
<tr>
<td>Molecular weight : No data available</td>
</tr>
<tr>
<td>pH : Not applicable</td>
</tr>
<tr>
<td>Pour point : No data available</td>
</tr>
<tr>
<td>Freezing point : No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range : 155 - 160 °C (311 - 320 °F)</td>
</tr>
<tr>
<td>Vapor pressure : 5.70 MMHG</td>
</tr>
</tbody>
</table>
2-Mercaptoethanol (BME)

SECTION 10: Stability and reactivity

Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions: Hazardous polymerization does not occur.
Further information: No decomposition if stored and applied as directed.
Hazardous reactions: Vapors may form explosive mixture with air.

Conditions to avoid: Heat, flames and sparks.

Materials to avoid: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Other data: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Acute oral toxicity
2-Mercaptoethanol: LD50: 98 - 168 mg/kg
Species: Rat
Sex: male and female
Method: OECD Test Guideline 401

Acute inhalation toxicity

SDS Number: 100000013444
<table>
<thead>
<tr>
<th>Compound</th>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Mercaptoethanol (BME)</td>
<td>LC50</td>
<td>625 ppm</td>
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<tr>
<td></td>
<td>Exposure time</td>
<td>4 h</td>
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<td></td>
<td>Test atmosphere</td>
<td>gas</td>
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<tr>
<td>Acute dermal toxicity</td>
<td>LD50</td>
<td>ca. 112 - 224 mg/kg</td>
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<tr>
<td></td>
<td>Species</td>
<td>Rabbit</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>male and female</td>
</tr>
<tr>
<td>Skin irritation</td>
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<td>Skin irritation</td>
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<tr>
<td>Eye irritation</td>
<td></td>
<td>Irreversible effects on the eye</td>
</tr>
<tr>
<td>Sensitization</td>
<td></td>
<td>The product is a skin sensitizer, sub-category 1A.</td>
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<tr>
<td>Repeated dose toxicity</td>
<td>Species</td>
<td>Rat, Male and female</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>Male and female</td>
</tr>
<tr>
<td></td>
<td>Application Route</td>
<td>oral gavage</td>
</tr>
<tr>
<td></td>
<td>Dose</td>
<td>0.15, 50, 75 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Exposure time</td>
<td>7 wk</td>
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<tr>
<td></td>
<td>Number of exposures</td>
<td>daily</td>
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<tr>
<td></td>
<td>NOEL</td>
<td>15 mg/kg</td>
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<tr>
<td></td>
<td>Lowest observable effect</td>
<td>50 mg/kg</td>
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<td>Method</td>
<td>OECD Guideline 422</td>
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<td>Target Organs</td>
<td>Heart, Liver</td>
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<td>Genotoxicity in vitro</td>
<td>Test Type</td>
<td>Ames test</td>
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<td></td>
<td>Method</td>
<td>Mutagenicity (Escherichia coli - reverse mutation assay)</td>
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<td></td>
<td>Result</td>
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<tr>
<td></td>
<td>Test Type</td>
<td>Chromosome aberration test in vitro</td>
</tr>
<tr>
<td></td>
<td>Method</td>
<td>OECD Guideline 473</td>
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<td>Result</td>
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<td></td>
<td>Test Type</td>
<td>Mouse lymphoma assay</td>
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<tr>
<td></td>
<td>Method</td>
<td>OECD Guideline 476</td>
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<td></td>
<td>Result</td>
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<td></td>
<td>Test Type</td>
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<td></td>
<td>Result</td>
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<tr>
<td>Genotoxicity in vivo</td>
<td>Test Type</td>
<td>Mouse micronucleus assay</td>
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<tr>
<td></td>
<td>Method</td>
<td>Mutagenicity (micronucleus test)</td>
</tr>
</tbody>
</table>
2-Mercaptoethanol (BME)

**Result:** negative

**Reproductive toxicity**

2-Mercaptoethanol:
- **Species:** Rat
- **Sex:** male
- **Application Route:** oral gavage
- **Dose:** 0, 15, 50, 75 mg/kg
- **Number of exposures:** daily
- **Test period:** 7 wks
- **Method:** OECD Guideline 422
- **NOAEL Parent:** 75 mg/kg

Species: Rat
- **Sex:** female
- **Application Route:** oral gavage
- **Dose:** 0, 15, 50, 75 mg/kg
- **Number of exposures:** daily
- **Test period:** 7 wks
- **NOAEL Parent:** 15 mg/kg

**Developmental Toxicity**

2-Mercaptoethanol:
- **Species:** Rat
- **Application Route:** oral gavage
- **Dose:** 5, 15, 25 mg/kg/bw/d
- **Exposure time:** GD 6-19
- **Number of exposures:** daily
- **Test period:** 20 d
- **Method:** OECD Guideline 414
- **NOAEL Teratogenicity:** 25 mg/kg
- **NOAEL Maternal:** 25 mg/kg

Animal testing did not show any effects on fetal development.

**CMR effects**

2-Mercaptoethanol:
- **Carcinogenicity:** Not available
- **Mutagenicity:** Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- **Teratogenicity:** Animal testing did not show any effects on fetal development.
- **Reproductive toxicity:** Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

2-Mercaptoethanol (BME)
- **Further information:** No data available.

**SECTION 12: Ecological information**

**Toxicity to fish**

2-Mercaptoethanol:
- **LC50:** 37 mg/l
- **Exposure time:** 96 h
- **Species:** Leuciscus idus (Golden orfe)
Toxicity to daphnia and other aquatic invertebrates

2-Mercaptoethanol : EC50: 0.4 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

Toxicity to algae

2-Mercaptoethanol : EC50: 19 mg/l
Exposure time: 72 h
Species: Desmodesmus subspicatus (green algae)
Method: OECD Test Guideline 201

M-Factor

2-mercaptoethanol : M-Factor (Acute Aquat. Tox.) 1

Toxicity to bacteria

2-Mercaptoethanol : EC50: 125 mg/l
Exposure time: 17 h
Species: Pseudomonas putida

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

2-Mercaptoethanol : NOEC: 0.0624 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Biodegradability

2-Mercaptoethanol : Result: Not readily biodegradable.
< 10 %
Method: OECD Test Guideline 301

Bioaccumulation

2-Mercaptoethanol : This material is not expected to bioaccumulate.

Results of PBT assessment

2-Mercaptoethanol : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information

2-Mercaptoethanol : Very toxic to aquatic life., Toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment
2-Mercaptoethanol (BME)

Short-term (acute) aquatic hazard
2-Mercaptoethanol : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
2-Mercaptoethanol : Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

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.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: 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)
UN2966, THIOGLYCOL, 6.1, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN2966, THIOGLYCOL, 6.1, II, (68.3 °C), MARINE POLLUTANT, (THIOGLYCOL)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN2966, THIOGLYCOL, 6.1, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN2966, THIOGLYCOL, 6.1, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (THIOGLYCOL)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF

SDS Number:100000013444 11/14
2-Mercaptoethanol (BME)

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SAFETY DATA SHEET

DANGEROUS GOODS (EUROPE)
UN2966, THIOGLYCOL, 6.1, II, ENVIRONMENTALLY HAZARDOUS, (THIOGLYCOL)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN2966, THIOGLYCOL, 6.1, II, ENVIRONMENTALLY HAZARDOUS, (THIOGLYCOL)

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

SECTION 15: Regulatory information

National legislation
Poisonous and Deleterious Substances Control Law
Poisonous substance : 2-mercaptoethanol (26.12) (100.16)

Industrial Safety and Health Law
Substances Subject to be Notified Names : Not applicable
Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances) : Not applicable
Harmful Substances Required Permission for Manufacture : Not applicable
Hazardous Substances Subject to Labeling Requirements : Not applicable
Ordinance on Prevention of Organic Solvent Poisoning : Not applicable
Ordinance on Prevention of Lead Poisoning : Not applicable
Harmful Substances Prohibited from Manufacture : Not applicable
Ordinance on Prevention of Hazards Due to Specified Chemical Substances : Not applicable
Ordinance on Prevention of Tetraalkyl Lead Poisoning : Not applicable
Substances Prevented From Impairment of Health Listed : Not applicable

Chemical Substance Control Law

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SAFETY DATA SHEET

2-Mercaptoethanol (BME)

Version 1.9

Revision Date 2019-08-21

Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

: Not applicable

Other regulations

Fire Service Law

: Flammable liquids
Type 2 petroleums
Hazardous rank III

High Pressure Gas Safety Act

: Not applicable

Explosive Control Law

: Not applicable

Vessel Safety Law

: Toxic and infectious substances (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law

: Toxic and infectious substances (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

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

: On or in compliance with the active portion of the TSCA inventory

Canada DSL

: All components of this product are on the Canadian DSL

Australia AICS

: On the inventory, or in compliance with the inventory

New Zealand NZIoC

: Not in compliance with the inventory

Japan ENCS

: On the inventory, or in compliance with the inventory

Korea KECI

: A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.

Philippines PICCS

: On the inventory, or in compliance with the inventory

China IECSC

: On the inventory, or in compliance with the inventory

Taiwan TCSI

: On the inventory, or in compliance with the inventory

SECTION 16: Other information

Further information

Legacy SDS Number : 26290

SDS Number:1000000013444 13/14
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

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
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<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
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<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
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<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
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<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
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<tr>
<td>CNS</td>
<td>Central Nervous System</td>
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<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
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<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
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<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
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<td>EC50</td>
<td>Effective Concentration</td>
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<td>No Observable Adverse Effect Level</td>
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<td>Effective Concentration 50%</td>
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<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
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<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
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<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
</tr>
<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
</tr>
<tr>
<td>&gt;=</td>
<td>Greater Than or Equal To</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act.</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
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<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
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<tr>
<td>TWA</td>
<td>Time Weighted Average</td>
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<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
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<tr>
<td>TSCA</td>
<td>Toxic Substance Control Act</td>
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<tr>
<td>KECSI</td>
<td>Korea, Existing Chemical Inventory</td>
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<tr>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
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<td>&lt;=</td>
<td>Less Than or Equal To</td>
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<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
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<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
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