SAFETY DATA SHEET

Ethyl Mercaptan


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

1.1 Product information

Product Name: Ethyl Mercaptan
Material: 1118972, 1111485, 1024772, 1086422, 1086423, 1021429, 1021431, 1021426, 1021425, 1021424, 1024773, 1024771, 1024770, 1021427, 1026776, 1021428, 1104918

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Legal Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>75-08-1</td>
<td>200-837-3 016-022-00-9</td>
<td>Chevron Phillips Chemicals International NV 01-2119491286-30-0000</td>
</tr>
</tbody>
</table>

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

Relevant Identified Uses Supported: Manufacture of Ethanethiol used under Strictly Controlled Conditions
Use at Industrial Site - Intermediate
Injection as odorant in Liquified Petroleum Gas under Strictly Controlled Conditions – Industrial
Injection as odorant in Liquified Petroleum Gas under Strictly Controlled Conditions – Consumer

1.3 Details of the supplier of the safety data sheet

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

Local: Chevron Phillips Chemicals International N.V.
Airport Plaza (Stockholm Building)
Leonardo Da Vinciiaan 19
1831 Diegem
Belgium

SDS Number: 100000068740
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

| Flammable liquids, Category 1                     | H224: Extremely flammable liquid and vapor. |
| Acute toxicity, Category 4                        | H302: Harmful if swallowed. |
| Acute toxicity, Category 4                        | H332: Harmful if inhaled. |
| Skin sensitization, Sub-category 1B               | H317: May cause an allergic skin reaction. |
| Short-term (acute) aquatic hazard, Category 1     | H400: Very toxic to aquatic life. |
| Long-term (chronic) aquatic hazard, Category 1    | H410: Very toxic to aquatic life with long lasting effects. |

2.2 Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal Word : Danger
Hazard Statements : H224 Extremely flammable liquid and vapor.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H410 Very toxic to aquatic life with long lasting effects.
**Precautionary Statements**

**Prevention:**
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P243 Take precautionary measures against static discharge.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- 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.
- P312 Call a POISON CENTER/doctor if you feel unwell.

**Storage:**
- P403 + P235 Store in a well-ventilated place. Keep cool.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous ingredients which must be listed on the label:
- 75-08-1 Ethyl Mercaptan

**Additional Labeling:**
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 1 %
The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 1 %

**SECTION 3: Composition/information on ingredients**

**3.1 - 3.2 Substance or Mixture**

**Synonyms:**
- ETSH
- Ethanethiol
- Ethyl Mercaptan

**Molecular formula:**
- C2H6S

**Hazardous ingredients**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>75-08-1</td>
<td>Flam. Liq. 1; H224</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>200-837-3</td>
<td>Acute Tox. 4; H302</td>
<td></td>
</tr>
<tr>
<td></td>
<td>016-022-00-9</td>
<td>Acute Tox. 4; H332</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin Sens. 1B; H317</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Acute 1; H400</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 1; H410</td>
<td></td>
</tr>
</tbody>
</table>
Ethyl Mercaptan

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Do not leave the victim unattended.

If inhaled: Call a physician or poison control center immediately. If unconscious, place in recovery position and seek medical advice.

In case of skin contact: If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact: Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

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: -48 °C (-54 °F)
Autoignition temperature: 295 °C (563 °F)

5.1 Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

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
## SECTION 6: Accidental release measures

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

**Personal precautions**
- Use personal protective equipment.
- Ensure adequate ventilation.
- Remove all sources of ignition.
- Evacuate personnel to safe areas.
- Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

### 6.2 Environmental precautions

**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.

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

**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).

### 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**
- Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms.Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

**Advice on safe handling**
- Avoid formation of aerosol. Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

**Advice on protection against fire and explosion**
- Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements for storage areas and containers: Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and 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.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>SK</th>
<th>Zložky (Ingredients)</th>
<th>Podstata (Basis)</th>
<th>Hodnota (Value)</th>
<th>Kontrolné parametre (Control parameters)</th>
<th>Poznámka (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>SK OEL</td>
<td>NPEL primerný</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SI</th>
<th>Sestavine (Ingredients)</th>
<th>Osnova (Basis)</th>
<th>Vrednost (Value)</th>
<th>Parametri nadzora (Control parameters)</th>
<th>Pripomba (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>SI OEL</td>
<td>MV</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>PT</th>
<th>Componentes (Ingredients)</th>
<th>Bases (Basis)</th>
<th>Valor (Value)</th>
<th>Parâmetros de controlo (Control parameters)</th>
<th>Nota (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>PT OEL</td>
<td>VLE-MP</td>
<td>0,5 ppm,</td>
<td>imitação do TRS, afeção do SNC.</td>
<td></td>
</tr>
</tbody>
</table>

afeção do SNC  afeção do sistema nervoso central
imitação do TRS  imitação do trato respiratório superior

<table>
<thead>
<tr>
<th>PL</th>
<th>Składniki (Ingredients)</th>
<th>Podstawa (Basis)</th>
<th>Wartość (Value)</th>
<th>Parametry dotyczące kontroli (Control parameters)</th>
<th>Uwaga (Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>PL NDS</td>
<td>NDS</td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL NDS</td>
<td></td>
<td>NDSch</td>
<td>2 mg/m³</td>
<td></td>
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<table>
<thead>
<tr>
<th>NO</th>
<th>Komponenter (Ingredients)</th>
<th>Grunnlag (Basis)</th>
<th>Verdi (Value)</th>
<th>Kontrollparameter (Control parameters)</th>
<th>Nota (Note)</th>
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<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>FOR-2011-12-06-1358</td>
<td>GV</td>
<td>0,5 ppm, 1 mg/m³</td>
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</table>

<table>
<thead>
<tr>
<th>LV</th>
<th>Sastāvdaļas (Ingredients)</th>
<th>Bāze (Basis)</th>
<th>Vērtība (Value)</th>
<th>Pārvaldības parametri (Control parameters)</th>
<th>Plezīme (Note)</th>
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</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>LV OEL</td>
<td>AER 8 st</td>
<td>1 mg/m³</td>
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</table>

<table>
<thead>
<tr>
<th>LT</th>
<th>Komponentai (Ingredients)</th>
<th>Šaltinis (Basis)</th>
<th>Vertė (Value)</th>
<th>Kontrolės parametrai (Control parameters)</th>
<th>Pastaba (Note)</th>
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<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>LT OEL</td>
<td>IPRD</td>
<td>1 mg/m³</td>
<td>O, Oksiduojanti</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>IE</th>
<th>Components (Ingredients)</th>
<th>Basis (Basis)</th>
<th>Value</th>
<th>Control parameters (Control parameters)</th>
<th>Note (Note)</th>
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<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>IE OEL</td>
<td>OELV - 8 hrs (TWA)</td>
<td>0,5 ppm, 1 mg/m³</td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>HU</th>
<th>Komponensek (Ingredients)</th>
<th>Bázis (Basis)</th>
<th>Erték (Value)</th>
<th>Ellenőrzési paraméterek (Control parameters)</th>
<th>Megjegyzés (Note)</th>
</tr>
</thead>
</table>

SDS Number:100000068740 6/18
## Ethyl Mercaptan

**SAFETY DATA SHEET**

### Ethyl Mercaptan

**Version 2.7**

**Revision Date: 2019-06-13**

<table>
<thead>
<tr>
<th>Component</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>HU OEL</td>
<td>1 mg/m³</td>
<td>i</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HU OEL</td>
<td>1 mg/m³</td>
<td></td>
<td>i</td>
</tr>
</tbody>
</table>

### GR

<table>
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<tr>
<th>Συστατικό</th>
<th>Βάση</th>
<th>Τιμή</th>
<th>Προϊόν μετρικού σχετισμού</th>
<th>Σημείωση</th>
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</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>GR OEL</td>
<td>TWA</td>
<td>10 ppm, 25 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan</td>
<td>GR OEL</td>
<td>STEL</td>
<td>10 ppm, 25 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### GB

<table>
<thead>
<tr>
<th>Components</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>GB EH40</td>
<td>TWA</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td>normal,</td>
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<tr>
<td>Ethyl Mercaptan</td>
<td>GB EH40</td>
<td>STEL</td>
<td>2 ppm, 5,2 mg/m³</td>
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### FR

<table>
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<th>Composants</th>
<th>Base</th>
<th>Valeur</th>
<th>Paramètres de contrôle</th>
<th>Note</th>
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<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>FR VLE</td>
<td>VME</td>
<td>normal</td>
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<tr>
<td>Ethyl Mercaptan</td>
<td>FR VLE</td>
<td>VME</td>
<td>normal</td>
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### FI

<table>
<thead>
<tr>
<th>Aineosat</th>
<th>Peruste</th>
<th>Arvo</th>
<th>Valvontaa koskevat muutujat</th>
<th>Huomautus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>FI OEL</td>
<td>HTP-arvol 15 min</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### ES

<table>
<thead>
<tr>
<th>Componentes</th>
<th>Base</th>
<th>Valor</th>
<th>Parámetros de control</th>
<th>Nota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>ES VLA</td>
<td>VLA-ED</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### EE

<table>
<thead>
<tr>
<th>Komponentid. osad</th>
<th>Alused</th>
<th>Väärtus</th>
<th>Kontrollparametreid</th>
<th>Märkused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>EE OEL</td>
<td>Piirnorm</td>
<td>0,5 ppm, 1 mg/m³</td>
<td>C,</td>
</tr>
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### DK

<table>
<thead>
<tr>
<th>Komponenter</th>
<th>Basis</th>
<th>Værdi</th>
<th>Kontrolparametre</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>DK OEL</td>
<td>GV</td>
<td>0,5 ppm, 1 mg/m³</td>
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### DE

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>DE TRGS 900</td>
<td>AGW</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td>DFG, Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission)</td>
</tr>
</tbody>
</table>

### CH

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>CH SUVA</td>
<td>MAK-Wert</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan</td>
<td>CH SUVA</td>
<td>K2GW</td>
<td>1 ppm, 2,6 mg/m³</td>
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</tr>
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</table>

### BE

<table>
<thead>
<tr>
<th>Bestanddelen</th>
<th>Basis</th>
<th>Waarde</th>
<th>Controleparameters</th>
<th>Opmerking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>BE OEL</td>
<td>TGG 8 hr</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### AT

<table>
<thead>
<tr>
<th>Inhaltsstoffe</th>
<th>Grundlage</th>
<th>Wert</th>
<th>Zu überwachende Parameter</th>
<th>Bemerkung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>AT OEL</td>
<td>MAK-KZW</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Ethyl Mercaptan</td>
<td>AT OEL</td>
<td>MAK-TMW</td>
<td>0,5 ppm, 1,3 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### DNEL

| End Use: Workers | Routes of exposure: Inhalation | Potential health effects: Chronic effects, Systemic effects | Value: 14,5 mg/m³ |

| End Use: Workers | Routes of exposure: Skin contact | Potential health effects: Chronic effects, Systemic effects | Value: 2,06 mg/kg |

| End Use: Workers | Routes of exposure: Inhalation | | |
Potential health effects: Chronic effects, Local effects
Value: 18.6 mg/m³

PNEC:
- Fresh water
  Value: 0.0001 mg/l
- Marine water
  Value: 0.00001 mg/l
- Fresh water sediment
  Value: 0.00049 mg/kg
- Marine sediment
  Value: 0.000049 mg/kg
- Soil
  Value: 0.000039 mg/kg

8.2 Exposure controls

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 workplace 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 Organic Vapors. 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. Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection
Choose body protection in relation to its type, to the
Ethyl Mercaptan

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Repulsive</td>
</tr>
<tr>
<td>Safety data</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>-48 °C (-54 °F)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>2,8 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>18 % (V)</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>295 °C (563 °F)</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C2H6S</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>62,14 g/mol</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Pour point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>35 °C (95 °F)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>16,20 PSI</td>
</tr>
<tr>
<td></td>
<td>at 37,8 °C (100,0 °F)</td>
</tr>
<tr>
<td>Relative density</td>
<td>0,84</td>
</tr>
<tr>
<td></td>
<td>at 15,6 °C (60,1 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>2,1</td>
</tr>
</tbody>
</table>
### SECTION 10: Stability and reactivity

10.1

**Reactivity**: Stable under recommended storage conditions.

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**: 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.

10.4

**Conditions to avoid**: Heat, flames and sparks.

10.5

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

10.6

**Hazardous decomposition products**

- Carbon oxides
- Sulfur oxides

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

### SECTION 11: Toxicological information

11.1

**Information on toxicological effects**

**Acute oral toxicity**

**Ethyl Mercaptan**: LD50: 682 mg/kg

Species: Rat
Sex: male
Method: Fixed Dose Method
**Acute inhalation toxicity**
Ethyl Mercaptan : LC50: 11.23 mg/l
Exposure time: 4 h
Species: Rat
Sex: male
Test atmosphere: vapor

**Skin irritation**
Ethyl Mercaptan : slight irritation.

**Eye irritation**
Ethyl Mercaptan : Information given is based on data obtained from similar substances.

**Sensitization**
Ethyl Mercaptan : The product is a skin sensitizer, sub-category 1B.
Information given is based on data obtained from similar substances.

**Repeated dose toxicity**
Ethyl Mercaptan : Species: Rat, Male and female
Sex: Male and female
Application Route: Inhalation
Dose: 25, 100, 400 ppm
Exposure time: 13 wks
Number of exposures: 6 hr/d, 5 d/wk
NOEL: 100 ppm
Lowest observable effect level: 400 ppm
Method: OECD Guideline 413
Information given is based on data obtained from similar substances.
**Ethyl Mercaptan**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Ethyl Mercaptan: Test Type: Ames test</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Metabolic activation: with and without metabolic activation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method: Mutagenicity (Escherichia coli - reverse mutation assay)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Type: Mouse lymphoma assay</td>
<td>Ambiguous</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Guideline 476</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: Ambiguous</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Test Type: Sister Chromatid Exchange Assay</td>
<td>positive</td>
</tr>
<tr>
<td></td>
<td>Metabolic activation: with and without metabolic activation</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Ethyl Mercaptan: Test Type: Micronucleus test</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Method: Mutagenicity (micronucleus test)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
<td></td>
</tr>
<tr>
<td>SDS Number: 100000068740</td>
<td>12/18</td>
<td></td>
</tr>
</tbody>
</table>
Sex: male and female  
Application Route: Oral diet  
Dose: 0, 10, 50, 200 mg/kg  
Exposure time: 42-53 days  
Number of exposures: once daily  
Method: OECD Guideline 422  
NOAEL Parent: 200 mg/kg  
NOAEL F1: 50 mg/kg  
Information given is based on data obtained from similar substances.

**Developmental Toxicity**

**Ethyl Mercaptan**  
Species: Rat  
Application Route: Inhalation  
Dose: 0, 0.037, 0.28, or 0.56 mg/L  
Number of exposures: 6 hrs/d  
Test period: GD 6-19  
Method: OECD Guideline 414  
NOAEL Teratogenicity: > 0.56 mg/l  
Information given is based on data obtained from similar substances.

Species: Rat  
Application Route: Inhalation  
Dose: 0, 10, 100, 200 ppm  
Number of exposures: 6 hrs/d  
Test period: GD 6-19  
Method: OECD Guideline 414  
NOAEL Teratogenicity: > 200 ppm  
NOAEL Maternal: > 200 ppm  
Information given is based on data obtained from similar substances.

**Aspiration toxicity**

**Ethyl Mercaptan**  
May be harmful if swallowed and enters airways.

**CMR effects**

**Ethyl Mercaptan**  
Carcinogenicity: Not available  
Mutagenicity: Not mutagenic in Ames Test.  
Teratogenicity: Animal testing did not show any effects on fetal development.  
Reproductive toxicity: Animal testing did not show any effects on fertility.

**Ethyl Mercaptan**  
Further information  
Solvents may degrease the skin.

**SECTION 12: Ecological information**

**12.1 Toxicity**

**Toxicity to fish**

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Ethyl Mercaptan

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Revision Date 2019-06-13

Ethyl Mercaptan: 2.4 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

Ethyl Mercaptan: EC50: < 0.1 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

Toxicity to algae

Ethyl Mercaptan: EC50: 3 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Method: OECD Test Guideline 201

M-Factor

ethanethiol: M-Factor (Acute Aquat. Tox.) 10
M-Factor (Chron. Aquat. Tox.) 10

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: This material is not expected to bioaccumulate.

12.4 Mobility in soil

Mobility

Ethyl Mercaptan: No data available

12.5 Results of PBT and vPvB assessment

Results of PBT assessment
Ethyl Mercaptan: Non-classified PBT substance, Non-classified vPvB substance

12.6 Other adverse effects

Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment
Ethyl Mercaptan

Version 2.7

Revision Date 2019-06-13

Short-term (acute) aquatic hazard
Ethyl Mercaptan : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
Ethyl Mercaptan : Very toxic to aquatic life with long lasting effects.

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.

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.

For additional details, see the Exposure Scenario in the Annex portion

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)
UN2363, ETHYL MERCAPTAN, 3, I, MARINE POLLUTANT, (ETHYL MERCAPTAN)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN2363, ETHYL MERCAPTAN, 3, I, (-48 °C), MARINE POLLUTANT, (ETHYL MERCAPTAN)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN2363, ETHYL MERCAPTAN, 3, I

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SECTION 15: Regulatory information

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


Water contaminating class (Germany) : WGK 3 highly water endangering

15.2 Chemical Safety Assessment

Components : ethanethiol A Chemical Safety Assessment has been carried out for this substance. 200-837-3

Major Accident Hazard Legislation

: 96/82/EC Update: 2003
Highly flammable
7b Quantity 1: 5.000 t
Quantity 2: 50.000 t

: 96/82/EC Update: 2003
Dangerous for the environment
9a Quantity 1: 100 t
Quantity 2: 200 t

Notification status
Europe REACH : On the inventory, or in compliance with the inventory
United States of America (USA) : On the inventory, or in compliance with the inventory
Ethyl Mercaptan

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
                      Fire Hazard: 4
                      Reactivity Hazard: 0

Further information
Legacy SDS Number : 10555

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>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
</tr>
<tr>
<td>EC50C</td>
<td>Effective Concentration 50%</td>
</tr>
<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
</tr>
<tr>
<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
</tr>
<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
</tr>
<tr>
<td>TSCA</td>
<td>On the inventory, or in compliance with the inventory</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>NOEC</td>
<td>No Observed Effect Concentration</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
</tbody>
</table>

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Ethyl Mercaptan

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 New Chemical Substances | TSCA | Toxic Substance Control Act
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% |

Full text of H-Statements referred to under sections 2 and 3.

H224 | Extremely flammable liquid and vapor.
H302 | Harmful if swallowed.
H317 | May cause an allergic skin reaction.
H332 | Harmful if inhaled.
H400 | Very toxic to aquatic life.
H410 | Very toxic to aquatic life with long lasting effects.