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

1.1 Product identifier

Trade name: EPROPOX FC 30 B

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

Use of the Substance/Mixture: Epoxy Hardener

1.3 Details of the supplier of the safety data sheet

- **Company:** Trelleborg Pipe Seals Duisburg GmbH
  Dr.-Alfred-Herrhausen-Allee 36
  47228 Duisburg
  Germany
- **Telephone:** +49 (0) 2065 999-0
- **Telefax:** +49 (0) 2065 999-111
- **E-mail address:** technic.epros@trelleborg.com

1.4 Emergency telephone number: +49 (0) 2065 999-150

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

- **Acute toxicity, Category 4**
  H302: Harmful if swallowed.
- **Acute toxicity, Category 4**
  H312: Harmful in contact with skin.
- **Skin corrosion, Category 1B**
  H314: Causes severe skin burns and eye damage.
- **Skin sensitisation, Category 1**
  H317: May cause an allergic skin reaction.
- **Chronic aquatic toxicity, Category 3**
  H412: Harmful to aquatic life with long lasting effects.

**Classification (67/548/EEC, 1999/45/EC)**

- **Corrosive**
  R34: Causes burns.
- **Harmful**
  R21/22: Harmful in contact with skin and if swallowed.
- **Sensitising**
  R43: May cause sensitisation by skin contact.
- **Dangerous for the environment**
  R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environ-
2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Signal word : Danger

Hazard pictograms :

Hazard statements :
H302 + H312 Harmful if swallowed or in contact with skin
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements :

Prevention:
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
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.
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.

Hazardous components which must be listed on the label:
Trimethylolpropane poly(oxypropylene)triamine
octahydro-4,7-methano-1H-indenedimethylamine
Amines, polyethylenepoly-, triethylenetetramine fraction
Phenol, 4,4'-(1-methyllethyldene)bis-, polymer with N,N'-bis(2-aminooethyl)-1,2-ethanedi amine and (chloromethyl)oxirane
2-piperazin-1-yethylamine

2.3 Other hazards
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.
### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

**Chemical nature**: Aliphatic Amine

#### Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No. EC-No. Registration number</th>
<th>Classification (67/548/EEC)</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethylolpropane poly(oxypropylene)triamine</td>
<td>39423-51-3</td>
<td>Xn; R21/22</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 20 - &lt; 25</td>
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<tr>
<td></td>
<td></td>
<td>Xi; R41</td>
<td>Eye Dam. 1; H312</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>N; R51/53</td>
<td>Aquatic Chronic 2; H411</td>
<td></td>
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<tr>
<td>octahydro-4,7-methano-1H-indenedimethylamine</td>
<td>68889-71-4</td>
<td>Xn; R21/22</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 20 - &lt; 25</td>
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<tr>
<td></td>
<td>272-573-7</td>
<td>C; R34</td>
<td>Acute Tox. 4; H312</td>
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<tr>
<td></td>
<td></td>
<td>Xi; R43</td>
<td>Skin Corr. 1B; H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Sens. 1; H317</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 3; H412</td>
<td></td>
</tr>
<tr>
<td>Amines, polyethylene-poly-, triethylenetetramine fraction</td>
<td>90640-67-8 292-588-2 01-2119487919-13</td>
<td>Xn; R21</td>
<td>Acute Tox. 4; H312</td>
<td>&gt;= 12.5 - &lt; 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C; R34</td>
<td>Skin Corr. 1B; H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Xi; R43</td>
<td>Skin Sens. 1; H317</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 3; H412</td>
<td></td>
</tr>
<tr>
<td>benzyl alcohol</td>
<td>100-51-6 202-859-9 01-2119492630-38</td>
<td>Xn; R20/22</td>
<td>Acute Tox. 4; H332</td>
<td>&gt;= 10 - &lt; 12,5</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 4; H302</td>
<td></td>
</tr>
<tr>
<td>Phenol, 4,4′-(1-methylethylene)bis-, polymer with N,N′-bis(2-aminoethyl)-1,2-ethanediamine and (chloromethyl)oxirane</td>
<td>38294-69-8</td>
<td>C; R34</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 10 - &lt; 12,5</td>
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<td></td>
<td></td>
<td>Xn; R21/22</td>
<td>Skin Corr. 1B; H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R43</td>
<td>Skin Sens. 1; H317</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>R52.53</td>
<td>Aquatic Chronic 3; H412</td>
<td></td>
</tr>
<tr>
<td>m-phenylene-bis(methylamine)</td>
<td>1477-55-0 216-032-5 01-2119480150-50</td>
<td>C; R34</td>
<td>Acute Tox. 4; H302</td>
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<td></td>
<td></td>
<td>R25.53</td>
<td>Skin Corr. 1B; H314</td>
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<td>Xn; R20/22</td>
<td>Skin Sens. 1; H317</td>
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<tr>
<td></td>
<td></td>
<td>R43</td>
<td>Aquatic Chronic 3; H412</td>
<td></td>
</tr>
<tr>
<td>2-piperazin-1-ylethylamine</td>
<td>140-31-8 205-411-0 01-2119471486-30</td>
<td>C; R34</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;= 1 - &lt; 2,5</td>
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<td></td>
<td></td>
<td>Xn; R21/22</td>
<td>Skin Corr. 1B; H314</td>
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<td></td>
<td></td>
<td>R43</td>
<td>Skin Sens. 1; H317</td>
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<tr>
<td></td>
<td></td>
<td>R52-R53</td>
<td>Aquatic Chronic 3; H412</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Show this safety data sheet to the doctor in attendance.
Keep warm and in a quiet place.
Take off all contaminated clothing immediately.

If inhaled: Move to fresh air.
Keep patient warm and at rest.
If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.
If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact: Wash off immediately with soap and plenty of water.
Do NOT use solvents or thinners.
If on clothes, remove clothes.
Burns must be treated by a physician.

In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If eye irritation persists, consult a specialist.
If easy to do, remove contact lens, if worn.

If swallowed: Do NOT induce vomiting.
If a person vomits when lying on his back, place him in the recovery position.
Call a physician immediately.
Give small amounts of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: corrosive effects
Burn

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: No information available.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- Carbon dioxide (CO2)
- Foam
- Dry powder
- Water mist

Unsuitable extinguishing media:
- None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
- The pressure in sealed containers can increase under the influence of heat.
- Cool closed containers exposed to fire with water spray.
- Hazardous decomposition products formed under fire conditions.

5.3 Advice for firefighters

Special protective equipment for firefighters:
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

Further information:
- In the event of fire and/or explosion do not breathe fumes.
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Immediately evacuate personnel to safe areas.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions:
- Refer to protective measures listed in sections 7 and 8.
- Evacuate personnel to safe areas.
- Use personal protective equipment.
- Ensure adequate ventilation.
- Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

6.2 Environmental precautions

Environmental precautions:
- Do not allow uncontrolled discharge of product into the environment.
- Try to prevent the material from entering drains or water courses.
- 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:
- Soak up with inert absorbent material (e.g. sand, silica gel,
acid binder, universal binder, sawdust). 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). Pick up and transfer to properly labelled containers.

6.4 Reference to other sections
For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapours or spray mist. Avoid inhalation, ingestion and contact with skin and eyes. Wear personal protective equipment. Persons with a history of skin sensitisation 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: Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures: Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. To maintain product quality, do not store in heat or direct sunlight.

Further information on storage conditions: Protect from moisture.

Advice on common storage: Keep away from isocyanates. Do not store near acids. Keep away from oxidizing agents.

Other data: Stable at normal ambient temperature and pressure.

7.3 Specific end use(s)

Specific use(s): Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Contains no substances with occupational exposure limit values.
**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

**Trimethylolpropane poly(oxypropylene)triamine**:
- End Use: Workers
- Exposure routes: Skin contact
- Potential health effects: Long-term systemic effects
  - Value: 1.6 mg/kg
- End Use: Workers
- Exposure routes: Inhalation
- Potential health effects: Long-term systemic effects
  - Value: 14 mg/m3
- End Use: Consumers
- Exposure routes: Skin contact
- Potential health effects: Long-term systemic effects
  - Value: 0.8 mg/kg

**Amines, polyethylene-poly-, triethylenetetramine fraction**:
- End Use: Workers
- Exposure routes: Skin contact
- Potential health effects: Long-term systemic effects
  - Value: 0.57 mg/kg
- End Use: Workers
- Exposure routes: Inhalation
- Potential health effects: Long-term systemic effects
  - Value: 1 mg/m3
- End Use: Consumer use
- Exposure routes: Skin contact
- Potential health effects: Long-term systemic effects
  - Value: 0.25 mg/kg
- End Use: Consumers
- Exposure routes: Inhalation
- Potential health effects: Long-term systemic effects
  - Value: 0.29 mg/m3

**Benzyl alcohol**:
- End Use: Workers
- Exposure routes: Inhalation
- Potential health effects: Short-term exposure, Systemic effects
  - Value: 450 mg/m3
- End Use: Workers
- Exposure routes: Inhalation
- Potential health effects: Long-term exposure, Systemic effects
  - Value: 90 mg/m3
- End Use: Workers
- Exposure routes: Skin contact
- Potential health effects: Short-term exposure, Systemic effects
  - Value: 47 mg/kg
- End Use: Workers
- Exposure routes: Skin contact
- Potential health effects: Long-term exposure, Systemic effects
  - Value: 9.5 mg/kg
- End Use: Consumers
- Exposure routes: Ingestion
- Potential health effects: Short-term exposure, Systemic effects
  - Value: 25 mg/kg
- End Use: Consumers
- Exposure routes: Ingestion
Potential health effects: Long-term exposure, Systemic effects
Value: 5 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 40,55 mg/m3
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term exposure, Systemic effects
Value: 8,11 mg/m3
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 28,5 mg/kg
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Long-term exposure, Systemic effects
Value: 5,7 mg/kg
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 20 mg/kg
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 0,04 mg/cm2
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 3,3 mg/kg
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term systemic effects
Value: 3,6 mg/m3
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term local effects
Value: 0,006 mg/cm2
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 10 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 5,3 mg/m3
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Short-term exposure, Systemic effects
Value: 1,5 mg/kg
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 21,4 mg/m3
End Use: Consumers
Exposure routes: Skin contact

2-piperazin-1-ylethylamine

Potential health effects: Short-term exposure, Systemic effects
Value: 21,4 mg/m3
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Local effects
Value: 0,04 mg/cm2
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term systemic effects
Value: 3,6 mg/m3
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term local effects
Value: 0,006 mg/cm2
End Use: Consumers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 10 mg/kg
End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 5,3 mg/m3
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Short-term exposure, Systemic effects
Value: 1,5 mg/kg
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 21,4 mg/m3
End Use: Consumers
Exposure routes: Skin contact
Low boiling point naphtha - unspecified

Potential health effects:
- Short-term exposure, Local effects
  Value: 0.02 mg/cm²
- End Use: Consumers
- Exposure routes: Skin contact
- Long-term systemic effects
  Value: 1.7 mg/kg
- End Use: Consumers
- Inhalation
- Long-term systemic effects
  Value: 0.9 mg/m³
- End Use: Consumers
- Ingestion
- Skin contact
- Long-term local effects
  Value: 0.003 mg/cm²
- Workers

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Trimethylolpropane poly(oxypropylene)triamine
- Fresh water
  Value: 0.0044 mg/l
- Marine water
  Value: 0.00044 mg/l
- Intermittent releases
  Value: 0.044 mg/l
- Fresh water sediment
  Value: 0.02 mg/kg
- Marine sediment
  Value: 0.002 mg/kg
- Soil
  Value: 0.002 mg/kg
- Sewage treatment plant
  Value: 10 mg/l

Amines, polyethylenepoly-, triethylenetetramine fraction
- Sewage treatment plant
  Value: 4.25 mg/l
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Fresh water Value: 0,135 mg/l
Fresh water sediment Value: 2,08 mg/kg
Marine water Value: 0,0027 mg/l
Marine sediment Value: 0,123 mg/kg
Soil Value: 1,67 mg/kg

benzyl alcohol: Fresh water
Value: 1 mg/l
Marine water
Value: 0,1 mg/l
Fresh water sediment
Value: 5,27 mg/kg
Marine sediment
Value: 0,527 mg/kg
Soil
Value: 0,456 mg/kg
Sewage treatment plant
Value: 39 mg/l
Intermittent releases
Value: 2,3 mg/l

2-piperazin-1-ylethylamine: Fresh water
Value: 0,058 mg/l
Marine water
Value: 0,0058 mg/l
Intermittent releases
Value: 0,58 mg/l
Fresh water sediment
Value: 215 mg/kg
Marine sediment
Value: 21,5 mg/kg
Soil Value:
42,9 mg/kg
Sewage treatment plant
Value: 250 mg/l

8.2 Exposure controls

Engineering measures
Effective exhaust ventilation system
effective ventilation in all processing areas

Personal protective equipment
Eye protection: Safety glasses with side-shields conforming to EN166
Do not wear contact lenses.
Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection
Material: Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.

Skin and body protection: Protective suit
Respiratory protection: Use respirator when performing operations involving potential exposure to vapour of the product. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Respirator with a vapour filter (EN 141).

Protective measures: Avoid contact with skin. Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- **Appearance**: liquid
- **Colour**: purple
- **Odour**: ammoniacal
- **Odour Threshold**: not determined
- **pH**: not determined
- **Melting point/freezing point**: Not applicable
- **Boiling point/boiling range**: > 150 °C
- **Flash point**: 150 °C
- **Evaporation rate**: not determined
- **Upper explosion limit**: Not applicable
- **Lower explosion limit**: Not applicable
- **Vapour pressure**: Not applicable
- **Relative vapour density**: not determined
- **Density**: 1,07 g/cm³ (25 °C)
- **Bulk density**: not determined
- **Solubility(ies)**
  - **Solubility in other solvents**: not determined
- **Partition coefficient: n-octanol/water**: No data available
Auto-ignition temperature : Not applicable
Thermal decomposition : Method: No data available

Viscosity
   Viscosity, dynamic : 400 - 700 mPa.s (25 °C)
   Viscosity, kinematic : not determined

Explosive properties : Not applicable
Oxidizing properties : Not applicable

9.2 Other information
   Surface tension : not determined
   Sublimation point : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity
   Stable under recommended storage conditions.

10.2 Chemical stability
   No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
   Hazardous reactions : Reacts with the following substances:
   Acids
   Strong oxidizing agents

10.4 Conditions to avoid
   Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials
   Materials to avoid : Strong acids
   Strong oxidizing agents

10.6 Hazardous decomposition products
   Hazardous decomposition products : This product may release the following:
   Nitrogen oxides (NOx)
   Carbon monoxide
   Carbon dioxide (CO2)
### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

**Acute toxicity**

**Product:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Acute toxicity estimate: 718.22 mg/kg</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>Acute toxicity estimate: &gt; 20 mg/l</td>
<td>Calculation method</td>
</tr>
<tr>
<td></td>
<td>Exposure time: 4 h</td>
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<td></td>
<td>Test atmosphere: vapour</td>
<td></td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>Acute toxicity estimate: 1.495 mg/kg</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

**Components:**

- **Trimethylolpropane poly(oxypropylene)triamine:**
  - Acute oral toxicity: LD50 (Rat, female): 550 mg/kg
    - Method: OECD Test Guideline 425
    - GLP: yes
  - Acute dermal toxicity: LD50 (Rat, male and female): > 1.000 mg/kg
    - Method: OECD Test Guideline 402
    - GLP: yes

- **Amines, polyethylenepoly-, triethylenetetramine fraction:**
  - Acute oral toxicity: LD50 (Rat, male and female): 1.716 mg/kg
    - Method: OECD Test Guideline 401
    - GLP: yes
  - Acute dermal toxicity: LD50 (Rabbit, male and female): 1.465 mg/kg
    - Method: OECD Test Guideline 402
    - GLP: yes

- **benzyl alcohol:**
  - Acute inhalation toxicity: LC50 (Rat, male and female): > 4.178 mg/l
    - Exposure time: 4 h
    - Test atmosphere: dust/mist
    - Method: OECD Test Guideline 403
    - GLP: yes

- **2-piperazin-1-ylethylamine:**
  - Acute oral toxicity: LD50 (Rat, male): 2.097 mg/kg
  - Acute dermal toxicity: LD50 (Rabbit, male): 866 mg/kg

- **Low boiling point naphtha - unspecified:**
  - Acute oral toxicity: LD50 (Rat): > 2.000 mg/kg
  - Acute inhalation toxicity: LC50 (Rat): > 5 mg/l
    - Exposure time: 4 h
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Acute dermal toxicity : LD50 (Rabbit, male and female): > 3.160 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Product:
Remarks: Acute dermal irritation/corrosion

Components:
Trimethylolpropane poly(oxypropylene)triamine:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Mild skin irritation
GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Corrosive
GLP: yes

benzyl alcohol:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

2-piperazin-1-ylethylamine:
Species: Rabbit
Result: Corrosive

Low boiling point naphtha - unspecified:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Serious eye damage/eye irritation

Product:
Remarks: Severe eye irritation

Components:
Amines, polyethylenepoly-, triethylenetetramine fraction:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Risk of serious damage to eyes.
GLP: yes

benzyl alcohol:
Species: Rabbit
Method: OECD Test Guideline 405
Result: Eye irritation
GLP: yes

2-piperazin-1-ylethylamine:
Species: Rabbit
Result: Risk of serious damage to eyes.

Low boiling point naphtha - unspecified:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation
GLP: yes

Respiratory or skin sensitisation

Components:
Trimethylolpropane poly(oxypropylene)triamine:
Test Type: Buehler Test
Exposure routes: Dermal
Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.
GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:
Test Type: Buehler Test
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.
GLP: yes

2-piperazin-1-ylethylamine:
Test Type: Maximisation Test (GPMT)
Exposure routes: Dermal
Species: Guinea pig
Method: OECD Test Guideline 406
Result: May cause sensitisation by skin contact.

Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
STOT - single exposure
STOT - repeated exposure
Repeated dose toxicity

Product:
Remarks: No data available
Aspiration toxicity

Components:
Low boiling point naphtha - unspecified:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12: Ecological information

12.1 Toxicity

Product:
Toxicity to fish : Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Components:
Trimethylolpropane poly(oxypropylene)triamine:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 13 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 4.4 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 1 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Amines, polyethylenepoly-, triethylenetetramine fraction:
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
Exposure time: 48 h
Test Type: static test
GLP: yes

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l
benzyl alcohol:
Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 230 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae: ErC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

2-piperazin-1-ylethylamine:
Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 2.190 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 58 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae: ErC50 (Selenastrum capricornutum (green algae)): > 1.000 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

Low boiling point naphtha - unspecified:
Toxicity to fish: LL50 (Fish): 9.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 3.2 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae: EC50 (Pseudokirchneriella subcapitata): 2.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

12.2 Persistence and degradability

Product:
Biodegradability: Remarks: No data available
Components:

Trimethylolpropane poly(oxypropylene)triamine:
Biodegradability: Test Type: aerobic
Result: Not readily biodegradable.
Method: OECD Test Guideline 301F
GLP: yes

2-piperazin-1-ylethylamine:
Biodegradability: Result: Not readily biodegradable.
Method: OECD Test Guideline 301F
GLP: yes

Low boiling point naphtha - unspecified:
Biodegradability: Result: Readily biodegradable.
Method: OECD Test Guideline 301F

12.3 Bioaccumulative potential

Product:
Bioaccumulation: Remarks: No data available

Components:

Trimethylolpropane poly(oxypropylene)triamine:
Partition coefficient: n-octanol/water: log Pow: -1,13 (20 °C)
pH: 12,7
GLP: yes

2-piperazin-1-ylethylamine:
Partition coefficient: n-octanol/water: log Pow: -1,48 (20 °C)

12.4 Mobility in soil

Components:

2-piperazin-1-ylethylamine:
Distribution among environmental compartments: Medium: Soil
Koc: 37000

12.5 Results of PBT and vPvB assessment

Product:
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

Product:
Additional ecological information: Remarks: An environmental hazard cannot be excluded in the
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according to Regulation (EC) No. 1907/2006

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: In accordance with local and national regulations.
Container hazardous when empty.
Do not dispose of with domestic refuse.
Do not mix waste streams during collection.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADR/RID: UN 2735
IMDG: UN 2735
IATA: UN 2735

14.2 UN proper shipping name

ADR/RID: AMINES, LIQUID, CORROSIVE, N.O.S.
(IMDG) (octahydro-4,7-methano-1H-indenedimethylamine)
IATA: Amines, liquid, corrosive, n.o.s.

14.3 Transport hazard class(es)

ADR/RID: 8
IMDG: 8
IATA: 8

14.4 Packing group

ADR/RID
Packing group: III
Classification Code: C7
Hazard Identification Number: 80
Labels: 8

IMDG
Packing group: III
Labels: 8
EmS Code: F-A, S-B

IATA
Packing instruction (cargo) : 856
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aircraft
Packing instruction (passenger aircraft) : 852
Packing group : III
Labels : 8

14.5 Environmental hazards

ADR/RID
Environmentally hazardous : no

IMDG
Marine pollutant : no

14.6 Special precautions for user
Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
Low boiling point naphtha - unspecified
Xylene, mixture of isomers
2-methoxy-1-methylethyl acetate
toluene

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).
This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV)
Not applicable


<table>
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<tr>
<th>9b</th>
<th>Dangerous for the environment</th>
<th>Quantity 1</th>
<th>Quantity 2</th>
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<tr>
<td></td>
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<td>200 t</td>
<td>500 t</td>
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15.2 Chemical Safety Assessment
Not applicable

SECTION 16: Other information

Full text of R-Phrases

R10 : Flammable.
R20/22 : Harmful by inhalation and if swallowed.
R21 : Harmful in contact with skin.
R21/22 : Harmful in contact with skin and if swallowed.
R34 : Causes burns.
R36/37/38 : Irritating to eyes, respiratory system and skin.
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R37 : Irritating to respiratory system.
R41 : Risk of serious damage to eyes.
R43 : May cause sensitisation by skin contact.
R51:53 : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52 : Harmful to aquatic organisms.
R52:53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 : May cause long-term adverse effects in the aquatic environment.
R65 : Harmful: may cause lung damage if swallowed.
R66 : Repeated exposure may cause skin dryness or cracking.
R67 : Vapours may cause drowsiness and dizziness.

Full text of H-Statements
H226 : Flammable liquid and vapour.
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H311 : Toxic in contact with skin.
H312 : Harmful in contact with skin.
H314 : Causes severe skin burns and eye damage.
H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H332 : Harmful if inhaled.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H411 : Toxic to aquatic life with long lasting effects.
H412 : Harmful to aquatic life with long lasting effects.

Full text of other abbreviations
Acute Tox. : Acute toxicity
Aquatic Chronic : Chronic aquatic toxicity
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Eye Irrit. : Eye irritation
Flam. Liq. : Flammable liquids
Skin Corr. : Skin corrosion
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation
STOT SE : Specific target organ toxicity - single exposure

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.