

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/19/2015

Reviewed on 05/19/2015

## 1 Identification

- **Product identifier**
- **Trade name:** PROPYLENE OXIDE
- **Article number:** 20410
- **CAS Number:**  
75-56-9
- **EC number:**  
200-879-2
- **Index number:**  
603-055-00-4
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Toxic

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Carc. Cat. 2, Muta. Cat. 2

May cause cancer. May cause heritable genetic damage.

**Harmful**

Harmful by inhalation, in contact with skin and if swallowed.

**Irritant**

Irritating to eyes, respiratory system and skin.

**Extremely flammable**

Extremely flammable.

· **Information concerning particular hazards for human and environment:** Not applicable.· **Label elements**· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**

Carc. Cat. 2, Muta. Cat. 2

Toxic

Extremely flammable

· **Risk phrases:**

May cause cancer.

May cause heritable genetic damage.

Extremely flammable.

Also harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 4

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = \*2

Fire = 4

Reactivity = 0

· **Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

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Trade name: **PROPYLENE OXIDE**

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### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
75-56-9 propylene oxide
- **Identification number(s)**
- **EC number:** 200-879-2
- **Index number:** 603-055-00-4

· <b>SVHC</b>
75-56-9 propylene oxide

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

### 75-56-9 propylene oxide

PEL	Long-term value: 240 mg/m <sup>3</sup> , 100 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 4.8 mg/m <sup>3</sup> , 2 ppm
	DSEN

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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Trade name: **PROPYLENE OXIDE**

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· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Ether-like
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

<b>Melting point/Melting range:</b>	-111.9 °C (-169 °F)
<b>Boiling point/Boiling range:</b>	34 °C (93 °F)

· **Flash point:** -37 °C (-35 °F)

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 430 °C (806 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

<b>Lower:</b>	1.9 Vol %
<b>Upper:</b>	15 Vol %

· **Vapor pressure at 20 °C (68 °F):** 590 hPa (443 mm Hg)

· **Density at 20 °C (68 °F):** 0.8313 g/cm<sup>3</sup> (6.937 lbs/gal)

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- |   |  |
|---|--|
| <b>· Relative density</b>   | Not determined.                            |
| <b>· Vapour density</b>   | Not determined.                            |
| <b>· Evaporation rate</b>   | Not determined.                            |
| <b>· Solubility in / Miscibility with Water at 20 °C (68 °F):</b> | 405 g/l                                    |
| <b>· Partition coefficient (n-octanol/water):</b> Not determined. |  |
| <b>· Viscosity:</b>   |  |
| <b>Dynamic:</b>   | Not determined.                            |
| <b>Kinematic:</b>   | Not determined.                            |
| <b>Organic solvents:</b>  | 0.0 %                                      |
| <b>· Other information</b>  | No further relevant information available. |

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

75-56-9 propylene oxide

Oral LD50 380 mg/kg (rat)

Dermal LD50 1245 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-56-9 propylene oxide

2B

- **NTP (National Toxicology Program)**

75-56-9 propylene oxide

R

- **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 3 (Self-assessment): extremely hazardous for water  
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
 Danger to drinking water if even extremely small quantities leak into the ground.*
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>   | <p style="margin: 0;">UN1280</p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;">Propylene oxide<br/>1280 Propylene oxide<br/>PROPYLENE OXIDE</p>                                       |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>   | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p style="margin: 0;">3 Flammable liquids<br/>3</p>  |

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Trade name: **PROPYLENE OXIDE**

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· **ADR, IMDG, IATA**

· **Class** 3 Flammable liquids  
 · **Label** 3

· **Packing group**  
 · **DOT, ADR, IMDG, IATA** I

· **Environmental hazards:**  
 · **Marine pollutant:** No

· **Special precautions for user** Warning: Flammable liquids  
 · **Danger code (Kemler):** 339  
 · **EMS Number:** F-E,S-D

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**  
 · **Quantity limitations** On passenger aircraft/rail: 1 L  
 On cargo aircraft only: 30 L  
 · **Hazardous substance:** 100 lbs, 45.4 kg

· **ADR**  
 · **Excepted quantities (EQ)** Code: E3  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 300 ml

· **IMDG**  
 · **Limited quantities (LQ)** 0  
 · **Excepted quantities (EQ)** Code: E3  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 300 ml

· **UN "Model Regulation":** UN1280, Propylene oxide, 3, I

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

Substance is listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

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· **Proposition 65**· **Chemicals known to cause cancer:**

Substance is listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

75-56-9 propylene oxide

B2

· **TLV (Threshold Limit Value established by ACGIH)**

75-56-9 propylene oxide

A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**

Carc. Cat. 2, Muta. Cat. 2  
Toxic  
Extremely flammable

· **Risk phrases:**

May cause cancer.

May cause heritable genetic damage.

Extremely flammable.

Also harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **National regulations:**· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 05/19/2015 / -

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**Trade name: PROPYLENE OXIDE**

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**Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*Flam. Liq. 1: Flammable liquids, Hazard Category 1*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2*

*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*

*Muta. 1B: Germ cell mutagenicity, Hazard Category 1B*

*Carc. 1B: Carcinogenicity, Hazard Category 1B*

*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

USA

**Safety data sheet**  
according to 1907/2006/EC, Article 31





Printing date 19.05.2015

Revision: 19.05.2015

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

- **Product identifier**
- **Trade name:** PROPYLENE OXIDE
- **Article number:** 20410
- **CAS Number:**  
75-56-9
- **EC number:**  
200-879-2
- **Index number:**  
603-055-00-4
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- ProSciTech Pty Ltd  
11 Carlton Street, Kirwan QLD 4817 Australia  
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
- Emgrid Australia Pty. Ltd.  
P.O. Box 118  
The Patch VIC 3792  
Australia  
Tel: 03 9752 1785  
Fax: 03 9752 1784  
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
-  **Toxic**  
Carc. Cat. 2, Muta. Cat. 2  
May cause cancer. May cause heritable genetic damage.
-  **Harmful**  
Harmful by inhalation, in contact with skin and if swallowed.
-  **Irritant**  
Irritating to eyes, respiratory system and skin.
-  **Extremely flammable**

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AU

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 19.05.2015

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**Trade name: PROPYLENE OXIDE**

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*Extremely flammable.*

· **Information concerning particular hazards for human and environment:** *Not applicable.*

· **Label elements**

· **Labelling according to EU guidelines:**

*The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.*

· **Code letter and hazard designation of product:**



*Carc. Cat. 2, Muta. Cat. 2*

*Toxic*

*Extremely flammable*

· **Risk phrases:**

*May cause cancer.*

*May cause heritable genetic damage.*

*Extremely flammable.*

*Also harmful by inhalation, in contact with skin and if swallowed.*

*Irritating to eyes, respiratory system and skin.*

· **Information concerning particular hazards for human and environment:**

· **Safety phrases:**

*Avoid exposure - obtain special instructions before use.*

*Wear suitable protective clothing, gloves and eye/face protection.*

*In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

*This material and its container must be disposed of as hazardous waste.*

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

### 3 Composition/information on ingredients

· **Chemical characterisation: Substances**

· **CAS No. Description**

*75-56-9 propylene oxide*

· **Identification number(s)**

· **EC number:** *200-879-2*

· **Index number:** *603-055-00-4*

· **SVHC**

*75-56-9 propylene oxide*

### 4 First aid measures

· **Description of first aid measures**

· **General information:**

*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

· **After inhalation:**

*Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.*

*In case of unconsciousness place patient stably in side position for transportation.*

· **After skin contact:** *Immediately wash with water and soap and rinse thoroughly.*

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**Safety data sheet**  
according to 1907/2006/EC, Article 31

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**Trade name: PROPYLENE OXIDE**

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- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Do not seal receptacle gas tight.  
Store in cool, dry conditions in well sealed receptacles.

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**Safety data sheet**  
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- Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**75-56-9 propylene oxide**

NES Long-term value: 48 mg/m<sup>3</sup>, 20 ppm

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

AU

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

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Trade name: PROPYLENE OXIDE

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### 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Colour:</b>	Colourless
· <b>Odour:</b>	Ether-like
· <b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· <b>Melting point/Melting range:</b>	-111.9 °C
· <b>Boiling point/Boiling range:</b>	34 °C

· **Flash point:** -37 °C

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 430 °C

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

· <b>Lower:</b>	1.9 Vol %
· <b>Upper:</b>	15 Vol %

· **Vapour pressure at 20 °C:** 590 hPa

· <b>Density at 20 °C:</b>	0.8313 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

· **Solubility in / Miscibility with water at 20 °C:** 405 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

· **Solvent content:**

· <b>Organic solvents:</b>	0.0 %
· <b>VOC (EC)</b>	0.00 %

· **Other information** No further relevant information available.

### 10 Stability and reactivity

· **Reactivity**

· **Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known.

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# Safety data sheet

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Trade name: **PROPYLENE OXIDE**

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- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

75-56-9 propylene oxide

Oral LD50 380 mg/kg (rat)

Dermal LD50 1245 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitisation:** No sensitising effects known.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**  
Carc. Cat. 2, Muta. Cat. 2

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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**Safety data sheet**  
according to 1907/2006/EC, Article 31


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Trade name: PROPYLENE OXIDE

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**14 Transport information**

· UN-Number	UN1280
· ADG, IMDG, IATA	
· UN proper shipping name	1280 PROPYLENE OXIDE
· ADG	PROPYLENE OXIDE
· IMDG, IATA	
· Transport hazard class(es)	
· ADG, IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· Packing group	
· ADG, IMDG, IATA	I
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	339
· EMS Number:	F-E,S-D
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· Transport category	1
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	0
· Excepted quantities (EQ)	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml

**15 Regulatory information**

· Safety, health and environmental regulations/legislation specific for the substance or mixture	
· Australian Inventory of Chemical Substances	
Substance is listed.	
· Standard for the Uniform Scheduling of Medicines and Poisons	
75-56-9 propylene oxide	S7

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# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 19.05.2015

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Trade name: **PROPYLENE OXIDE**

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· **Labelling according to EU guidelines:**

*The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.*

· **Code letter and hazard designation of product:**



Carc. Cat. 2, Muta. Cat. 2  
Toxic  
Extremely flammable

· **Risk phrases:**

*May cause cancer.*

*May cause heritable genetic damage.*

*Extremely flammable.*

*Also harmful by inhalation, in contact with skin and if swallowed.*

*Irritating to eyes, respiratory system and skin.*

· **Safety phrases:**

*Avoid exposure - obtain special instructions before use.*

*Wear suitable protective clothing, gloves and eye/face protection.*

*In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).*

*This material and its container must be disposed of as hazardous waste.*

· **National regulations:**

· **Information about limitation of use:**

*Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.*

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**

75-56-9	propylene oxide
---------	-----------------

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

AU

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/19/2015

Reviewed on 05/19/2015

## 1 Identification

- **Product identifier**
- **Trade name:** PROPYLENE OXIDE
- **Article number:** 20410
- **CAS Number:**  
75-56-9
- **EC number:**  
200-879-2
- **Index number:**  
603-055-00-4
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.



GHS08 Health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Toxic

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CA

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Trade name: **PROPYLENE OXIDE**

(Contd. of page 1)

Carc. Cat. 2, Muta. Cat. 2

May cause cancer. May cause heritable genetic damage.

**Harmful**

Harmful by inhalation, in contact with skin and if swallowed.

**Irritant**

Irritating to eyes, respiratory system and skin.

**Extremely flammable**

Extremely flammable.

· **Information concerning particular hazards for human and environment:** Not applicable.· **Label elements**· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Code letter and hazard designation of product:**

Carc. Cat. 2, Muta. Cat. 2

Toxic

Extremely flammable

· **Risk phrases:**

May cause cancer.

May cause heritable genetic damage.

Extremely flammable.

Also harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **Hazard description:**· **WHMIS-symbols:**

B2 - Flammable liquid

D1B - Toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 4

Reactivity = 0

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Trade name: **PROPYLENE OXIDE**

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- **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = *2
FIRE	4	Fire = 4
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
75-56-9 propylene oxide
- **Identification number(s)**
- **EC number:** 200-879-2
- **Index number:** 603-055-00-4

- **SVHC**

75-56-9	propylene oxide
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### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

CA

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/19/2015

Reviewed on 05/19/2015

Trade name: **PROPYLENE OXIDE**

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**75-56-9 propylene oxide**

EL Long-term value: 2 ppm  
IARC 2B; S

EV Long-term value: 2 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

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# Safety Data Sheet

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Trade name: **PROPYLENE OXIDE**

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Store protective clothing separately.  
 Avoid contact with the eyes and skin.
- **Breathing equipment:**  
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Ether-like
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not determined.

#### · Change in condition

<b>Melting point/Melting range:</b>	-111.9 °C
<b>Boiling point/Boiling range:</b>	34 °C

· **Flash point:** -37 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 430 °C

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# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 05/19/2015

Trade name: **PROPYLENE OXIDE**

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· <b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Not determined.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· <b>Explosion limits:</b>	
Lower:	1.9 Vol %
Upper:	15 Vol %
· <b>Vapor pressure at 20 °C:</b>	590 hPa
· <b>Density at 20 °C:</b>	0.8313 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water at 20 °C:</b>	405 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

75-56-9 propylene oxide

Oral	LD50	380 mg/kg (rat)
Dermal	LD50	1245 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

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Trade name: **PROPYLENE OXIDE**

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- **Additional toxicological information:**

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-56-9 propylene oxide

2B

- **NTP (National Toxicology Program)**

75-56-9 propylene oxide

R

- **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**

- **DOT, TDG, IMDG, IATA**

UN1280

- **UN proper shipping name**

- **DOT**

Propylene oxide

- **TDG**

1280 Propylene oxide

- **IMDG, IATA**

PROPYLENE OXIDE

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# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 05/19/2015

Trade name: PROPYLENE OXIDE

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· **Transport hazard class(es)**· **DOT**

· **Class** 3 Flammable liquids  
 · **Label** 3  
 · **TDG, IMDG, IATA**



· **Class** 3 Flammable liquids  
 · **Label** 3

· **Packing group**· **DOT, TDG, IMDG, IATA** I· **Environmental hazards:**· **Marine pollutant:** No· **Special precautions for user**

Warning: Flammable liquids

· **Danger code (Kemler):**

339

· **EMS Number:**

F-E,S-D

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **DOT**· **Quantity limitations**

On passenger aircraft/rail: 1 L

On cargo aircraft only: 30 L

· **Hazardous substance:**

100 lbs, 45.4 kg

· **TDG**· **Excepted quantities (EQ)**

Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· **IMDG**· **Limited quantities (LQ)**

0

· **Excepted quantities (EQ)**

Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· **UN "Model Regulation":**

UN1280, Propylene oxide, 3, I

CA

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acc. to OSHA HCS

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Reviewed on 05/19/2015

Trade name: **PROPYLENE OXIDE**

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## 15 Regulatory information

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

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

75-56-9 propylene oxide

B2

· **TLV (Threshold Limit Value established by ACGIH)**

75-56-9 propylene oxide

A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Carc. Cat. 2, Muta. Cat. 2

Toxic

Extremely flammable

· **Risk phrases:**

May cause cancer.

May cause heritable genetic damage.

Extremely flammable.

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# Safety Data Sheet

## acc. to OSHA HCS

Printing date 05/19/2015

Reviewed on 05/19/2015

**Trade name: PROPYLENE OXIDE**

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Also harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

This material and its container must be disposed of as hazardous waste.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 05/19/2015 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 1: Flammable liquids, Hazard Category 1

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Carc. 1B: Carcinogenicity, Hazard Category 1B

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 19.05.2015

Revision: 19.05.2015

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

- **1.1 Product identifier**
- **Trade name:** PROPYLENE OXIDE
- **Article number:** 20410
- **CAS Number:**  
75-56-9
- **EC number:**  
200-879-2
- **Index number:**  
603-055-00-4
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.



GHS08 health hazard

Muta. 1B H340 May cause genetic defects.

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

(Contd. on page 2)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

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**Trade name: PROPYLENE OXIDE**

(Contd. of page 1)

· **2.2 Label elements**· **Labelling according to Regulation (EC) No 1272/2008***The substance is classified and labelled according to the CLP regulation.*· **Hazard pictograms**

GHS02   GHS07   GHS08

· **Signal word** *Danger*· **Hazard-determining components of labelling:***propylene oxide*· **Hazard statements**

- H224                      *Extremely flammable liquid and vapour.*  
 H302+H312+H332   *Harmful if swallowed, in contact with skin or if inhaled.*  
 H315                      *Causes skin irritation.*  
 H319                      *Causes serious eye irritation.*  
 H340                      *May cause genetic defects.*  
 H350                      *May cause cancer.*  
 H335                      *May cause respiratory irritation.*

· **Precautionary statements**

- P210                      *Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*  
 P241                      *Use explosion-proof electrical/ventilating/lighting/equipment.*  
 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.*  
 P322                      *Specific measures (see on this label).*  
 P405                      *Store locked up.*  
 P501                      *Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **2.3 Other hazards**· **Results of PBT and vPvB assessment**

- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

### SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**· **CAS No. Description***75-56-9 propylene oxide*· **Identification number(s)**· **EC number:** *200-879-2*· **Index number:** *603-055-00-4*· **SVHC**75-56-9 | *propylene oxide*

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**SECTION 4: First aid measures**· **4.1 Description of first aid measures**· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Call for a doctor immediately.· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**SECTION 5: Firefighting measures**· **5.1 Extinguishing media**· **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.· **5.3 Advice for firefighters**· **Protective equipment:** Mouth respiratory protective device.**SECTION 6: Accidental release measures**· **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**SECTION 7: Handling and storage**· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

· **Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect from heat.

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Protect against electrostatic charges.

Keep respiratory protective device available.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Do not seal receptacle gas tight.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

75-56-9 propylene oxide

WEL	Long-term value: 12 mg/m <sup>3</sup> , 5 ppm
	Carc

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:**

Tightly sealed goggles

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · General Information

##### · Appearance:

Form:	Liquid
Colour:	Colourless
Odour:	Ether-like
Odour threshold:	Not determined.

· **pH-value:** Not determined.

##### · Change in condition

Melting point/Melting range:	-111.9 °C
Boiling point/Boiling range:	34 °C

· **Flash point:** -37 °C

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 430 °C

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### · Explosion limits:

Lower:	1.9 Vol %
Upper:	15 Vol %

· **Vapour pressure at 20 °C:** 590 hPa

· <b>Density at 20 °C:</b>	0.8313 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

· **Solubility in / Miscibility with water at 20 °C:** 405 g/l

· **Partition coefficient (n-octanol/water):** Not determined.

##### · Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

##### · Solvent content:

Organic solvents:	0.0 %
VOC (EC)	0.00 %

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· **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

**75-56-9 propylene oxide**

Oral	LD50	380 mg/kg (rat)
Dermal	LD50	1245 mg/kg (rabbit)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitisation:** No sensitising effects known.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Muta. 1B, Carc. 1B

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

- **Additional ecological information:**

- **General notes:**

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

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### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA** UN1280

· **14.2 UN proper shipping name**

· **ADR** 1280 PROPYLENE OXIDE  
· **IMDG, IATA** PROPYLENE OXIDE

· **14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class** 3 Flammable liquids.  
· **Label** 3

· **14.4 Packing group**

· **ADR, IMDG, IATA** I

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user**

Warning: Flammable liquids.  
· **Danger code (Kemler):** 339  
· **EMS Number:** F-E,S-D

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)** 0

· **Excepted quantities (EQ)** Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· **Transport category** 1

· **Tunnel restriction code** D/E

· **IMDG**

· **Limited quantities (LQ)** 0

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- |                                   |   |
|-----------------------------------|---|
| · <b>Excepted quantities (EQ)</b> | Code: E3<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 300 ml |
| · <b>UN "Model Regulation":</b>   | UN1280, PROPYLENE OXIDE, 3, I   |

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations:**
- **Information about limitation of use:**  
*Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.*
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57**  
75-56-9 | propylene oxide
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Abbreviations and acronyms:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Flam. Liq. 1: Flammable liquids, Hazard Category 1  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
Carc. 1B: Carcinogenicity, Hazard Category 1B  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

GB

# Veiligheidsinformatieblad volgens 1907/2006/EG, Artikel 31

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## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

### · 1.1 Productidentificatie

· Handelsnaam: **PROPYLENE OXIDE**

· Artikelnummer: 20410

· CAS-nummer:

75-56-9

· EC-nummer:

200-879-2

· Catalogusnummer:

603-055-00-4

· 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· Toepassing van de stof / van de bereiding *Laboratoriumchemicaliën*

· 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

· Fabrikant/leverancier:

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: info@emsdiasum.com*

*www.emsdiasum.com*

*Aurion*

*Binnenhaven 5*

*6709 PD Wageningen*

*The Netherlands*

*Tel: 31 317 415094*

*Fax: 31 317 415955*

*email: info@aurion.nl*

· Inlichtingengevende sector: *Product safety department*

· 1.4 Telefoonnummer voor noodgevallen:

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

## RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· Indeling overeenkomstig Verordening (EG) nr. 1272/2008



GHS02 vlam

*Flam. Liq. 1 H224 Zeer licht ontvlambare vloeistof en damp.*



GHS08 gezondheidsgevaar

*Muta. 1B H340 Kan genetische schade veroorzaken.*

*Carc. 1B H350 Kan kanker veroorzaken.*



GHS07

(Vervolg op blz. 2)

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Acute Tox. 4 H302 Schadelijk bij inslikken.  
 Acute Tox. 4 H312 Schadelijk bij contact met de huid.  
 Acute Tox. 4 H332 Schadelijk bij inademing.  
 Skin Irrit. 2 H315 Veroorzaakt huidirritatie.  
 Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.  
 STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

## · 2.2 Etiketteringselementen

### · Etikettering overeenkomstig Verordening (EG) nr. 1272/2008

De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

### · Gevarenpictogrammen



GHS02 GHS07 GHS08

### · Signaalwoord Gevaar

### · Gevaaraanduidende componenten voor de etikettering:

propyleenoxide

### · Gevarenaanduidingen

H224 Zeer licht ontvlambare vloeistof en damp.  
 H302+H312+H332 Schadelijk bij inslikken, bij contact met de huid en bij inademing.  
 H315 Veroorzaakt huidirritatie.  
 H319 Veroorzaakt ernstige oogirritatie.  
 H340 Kan genetische schade veroorzaken.  
 H350 Kan kanker veroorzaken.  
 H335 Kan irritatie van de luchtwegen veroorzaken.

### · Voorzorgsmaatregelen

P210 Verwijderd houden van warmte/vonken/open vuur/hete oppervlakken. - Niet roken.  
 P241 Explosieveilige elektrische/ventilatie-/verlichtings- apparatuur gebruiken.  
 P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken - huid met water afspoelen/afdouchen.  
 P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.  
 P322 Specifieke maatregelen (zie op dit etiket).  
 P405 Achter slot bewaren.  
 P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

### · 2.3 Andere gevaren

### · Resultaten van PBT- en zPzB-beoordeling

- PBT: Niet bruikbaar.
- zPzB: Niet bruikbaar.

## RUBRIEK 3: Samenstelling en informatie over de bestanddelen

### · 3.1 Chemische karakterisering: Stoffen

- CAS-Nr. omschrijving  
75-56-9 propyleenoxide
- Identificatienummer(s)
- EC-nummer: 200-879-2

(Vervolg op blz. 3)

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 · **Catalogusnummer:** 603-055-00-4

 · **SVHC**

75-56-9 | propyleenoxide

### RUBRIEK 4: Eerstehulpmaatregelen

#### · 4.1 Beschrijving van de eerstehulpmaatregelen

##### · Algemene informatie:

Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.

##### · Na het inademen:

Frisse lucht toedienen, eventueel beademing, warmte. Wanneer de klachten niet ophouden, een arts raadplegen.

Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

##### · Na huidcontact: Onmiddellijk met water en zeep afwassen en goed naspoelen.

##### · Na oogcontact:

De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.

##### · Na inslikken: Onmiddellijk arts raadplegen.

#### · 4.2 Belangrijkste acute en uitgestelde symptomen en effecten

Geen verdere relevante informatie verkrijgbaar.

#### · 4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling

Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

#### · 5.1 Blusmiddelen

##### · Geschikte blusmiddelen:

CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.

#### · 5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt

Geen verdere relevante informatie verkrijgbaar.

#### · 5.3 Advies voor brandweerlieden

##### · Speciale beschermende kleding: Ademhalingstoestel aantrekken.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

#### · 6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures

Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

#### · 6.2 Milieuvorzorgsmaatregelen:

Met veel water verdunnen.

Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

#### · 6.3 InsluTINGS- en reinigingsmethoden en -materiaal:

Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.

Besmet materiaal zoals afval volgens punt 13 verwijderen.

Voor voldoende ventilatie zorgen.

#### · 6.4 Verwijzing naar andere rubrieken

Informatie inzake veilig gebruik - zie hoofdstuk 7.

Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.

Informatie inzake berging - zie hoofdstuk 13.

NL

(Vervolg op blz. 4)

**Handelsnaam: PROPYLENE OXIDE**

(Vervolg van blz. 3)

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
 Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.  
 Tanks voorzichtig openen en behandelen.  
 Aërosolvorming vermijden.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**  
 Onststekingsbronnen op afstand houden - niet roken.  
 Beschermen tegen hitte.  
 Maatregelen treffen tegen ontlading van statische elektriciteit.  
 Ademhalingsstoestellen gereedhouden.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**  
 Tanks ondoordringbaar gesloten houden.  
 Tanks niet gasdicht afsluiten.  
 Koel en droog bewaren in goed gesloten vaten.  
 Tegen hitte en directe zonnestralen beschermen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.

#### · 8.1 Controleparameters

- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

#### 75-56-9 propyleenoxide

WGW	Lange termijn waarde: 6 mg/m <sup>3</sup> , 2,5 ppm
-----	---

- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

#### · 8.2 Maatregelen ter beheersing van blootstelling

##### · **Persoonlijke beschermingsvoorzieningen:**

##### · **Algemene beschermings- en gezondheidsmaatregelen:**

- Verwijderd houden van eet- en drinkwaren.
- Verontreinigde kleding onmiddellijk uittrekken.
- Vóór de pauze en aan het einde van werktijd handen wassen.
- Beschermende kleding afzonderlijk bewaren.
- Aanraking met de ogen en de huid vermijden.

##### · **Ademhalingsbescherming:**

- Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.

##### · **Handbescherming:**



Veiligheidshandschoenen

- Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.
- Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.
- Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

(Vervolg op blz. 5)



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- **Handschoenmateriaal**

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.

- **Doordringingstijd van het handschoenmateriaal**

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**

- **Algemene gegevens**

- **Voorkomen:**

<b>Vorm:</b>	Vloeistof
<b>Kleur:</b>	Kleurloos
<b>Reuk:</b>	Etherachtig
<b>Geurdrempelwaarde:</b>	Niet bepaald.

- **pH-waarde:** Niet bepaald.

- **Toestandsverandering**

<b>Smeltpunt/smeltbereik:</b>	-111,9 °C
<b>Kookpunt/kookpuntbereik:</b>	34 °C

- **Vlampunt:** -37 °C

- **Ontvlambaarheid (vast, gasvormig):** Niet bruikbaar.

- **Ontstekingstemperatuur:** 430 °C

- **Ontbindingstemperatuur:** Niet bepaald.

- **Zelfonsteking:** Niet bepaald.

- **Ontploffingsgevaar:** Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

- **Ontploffingsgrenzen:**

<b>Onderste:</b>	1,9 Vol %
<b>Bovenste:</b>	15 Vol %

- **Dampspanning bij 20 °C:** 590 hPa

<b>Dichtheid bij 20 °C:</b>	0,8313 g/cm <sup>3</sup>
<b>Relatieve dichtheid</b>	Niet bepaald.
<b>Dampdichtheid</b>	Niet bepaald.
<b>Verdampingssnelheid</b>	Niet bepaald.

- **Oplosbaarheid in/mengbaarheid met**

**Water bij 20 °C:** 405 g/l

- **Verdelingscoëfficiënt (n-octanol/water):** Niet bepaald.

- **Viscositeit**

**Dynamisch:** Niet bepaald.

(Vervolg op blz. 6)

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**Handelsnaam: PROPYLENE OXIDE**

(Vervolg van blz. 5)

<b>Kinematisch:</b>	Niet bepaald.
<b>Oplosmiddelgehalte:</b>	
Organisch oplosmiddel:	0,0 %
VOC (EG)	0,00 %
<b>9.2 Overige informatie</b>	Geen verdere relevante informatie verkrijgbaar.

## RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

## RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit:**

<b>Indelingsrelevantie LD/LC50-waarden:</b>		
<b>75-56-9 propyleenoxide</b>		
Oraal	LD50	380 mg/kg (rat)
Dermaal	LD50	1245 mg/kg (rabbit)

- **Primaire aandoening:**
- **op de huid:** Prikfelt de huid en de slijmvliezen.
- **aan het oog:** Prikkeling
- **Overgevoeligheid:** Geen effect van overgevoeligheid bekend.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**  
Muta. 1B, Carc. 1B

## RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
- Waterbezwaarlijkheid (NL) 2: Kan erfelijke genetische schade veroorzaken.
- Gevaar voor water klasse 3 (D) (Zelfclassificatie): gevaar voor water groot
- Niet lozen in grondwater, oppervlaktewater of riolering, ook niet in kleine hoeveelheden.
- Gevaar voor drinkwater zelfs bij het uitlopen van zeer geringe hoeveelheden in de ondergrond.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

(Vervolg op blz. 7)

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· 12.6 Andere schadelijke effecten Geen verdere relevante informatie verkrijgbaar.

## RUBRIEK 13: Instructies voor verwijdering

- 13.1 Afvalverwerkingsmethoden
- Aanbeveling: Mag niet tesamen met huisvuil gestort worden of in de riolering terecht komen.
- Niet gereinigde verpakkingen:
- Aanbeveling: Afvalverwijdering volgens overheidsbepalingen.
- Aanbevolen reinigingsmiddel: Water, eventueel met toevoeging van reinigingsmiddelen.

## RUBRIEK 14: Informatie met betrekking tot het vervoer

- |  |   |
|--|---|
| · 14.1 VN-nummer   |   |
| · ADR, IMDG, IATA  | UN1280  |
| · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN              |   |
| · ADR  | 1280 PROPYLEENOXIDE   |
| · IMDG, IATA   | PROPYLENE OXIDE   |
| · 14.3 Transportgevarenklasse(n)   |   |
| · ADR, IMDG, IATA  |   |
|  |   |
| · klasse   | 3 Brandbare vloeistoffen  |
| · Etiket   | 3   |
| · 14.4 Verpakkingsgroep:   |   |
| · ADR, IMDG, IATA  | I   |
| · 14.5 Milieugevaren:  |   |
| · Marine pollutant:  | Neen  |
| · 14.6 Bijzondere voorzorgen voor de gebruiker                                     | Waarschuwing: Brandbare vloeistoffen  |
| · Kemler-getal:  | 339   |
| · EMS-nummer:  | F-E,S-D   |
| · 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code   | Niet bruikbaar.   |
| · Transport/verdere gegevens:  |   |
| · ADR  |   |
| · Beperkte hoeveelheden (LQ)   | 0   |
| · Uitgezonderde hoeveelheden (EQ)  | Code: E3<br>Grootste netto hoeveelheid per binnenverpakking: 30 ml<br>Grootste netto hoeveelheid per buitenverpakking: 300 ml |
| · Vervoerscategorie  | 1   |
| · Tunnelbeperkingscode   | D/E   |

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- |                                   |  |
|-----------------------------------|--|
| · <b>IMDG</b>                     |  |
| · <b>Limited quantities (LQ)</b>  | 0  |
| · <b>Excepted quantities (EQ)</b> | Code: E3   |
|                                   | Maximum net quantity per inner packaging: 30 ml  |
|                                   | Maximum net quantity per outer packaging: 300 ml |
| · <b>VN "Model Regulation":</b>   | UN1280, PROPYLENOXIDE, 3, I                      |

## RUBRIEK 15: Regelgeving

- **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

- **SZW-lijst van kankerverwekkende stoffen**

De stof is aanwezig.

- **SZW-lijst van mutagene stoffen**

De stof is aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

- **Nationale voorschriften:**

- **Aanwijzingen m.b.t. tewerkstellingsbeperking:**

Werknemers mogen aan deze gevaarlijke stof niet blootgesteld worden. In uitzonderingsgevallen kan de overheid speciale vergunningen afgeven.

- **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 2: Saneringsinspanning A

- **Aanvullende voorschriften, beperkingen en verbodsverordeningen**

- **Zeer zorgwekkende stoffen (SVHC) volgens REACH, artikel 57**

75-56-9 | propyleenoxide

- **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

- **Afkortingen en acroniemen:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 1: Flammable liquids, Hazard Category 1

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

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*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*  
*Muta. 1B: Germ cell mutagenicity, Hazard Category 1B*  
*Carc. 1B: Carcinogenicity, Hazard Category 1B*  
*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

(Vervolg van blz. 8)

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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### SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** PROPYLENE OXIDE
- **Code du produit:** 20410
- **No CAS:**  
75-56-9
- **Numéro CE:**  
200-879-2
- **Numéro index:**  
603-055-00-4
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

Flam. Liq. 1 H224 Liquide et vapeurs extrêmement inflammables.



GHS08 danger pour la santé

Muta. 1B H340 Peut induire des anomalies génétiques.

Carc. 1B H350 Peut provoquer le cancer.



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.

Acute Tox. 4 H312 Nocif par contact cutané.

Acute Tox. 4 H332 Nocif par inhalation.

Skin Irrit. 2 H315 Provoque une irritation cutanée.

Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.

STOT SE 3 H335 Peut irriter les voies respiratoires.

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- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02    GHS07    GHS08

- **Mention d'avertissement** Danger
- **Composants dangereux déterminants pour l'étiquetage:**  
oxyde de propylène
- **Mentions de danger**
  - H224                    Liquide et vapeurs extrêmement inflammables.
  - H302+H312+H332    Nocif en cas d'ingestion, de contact cutané ou d'inhalation.
  - H315                    Provoque une irritation cutanée.
  - H319                    Provoque une sévère irritation des yeux.
  - H340                    Peut induire des anomalies génétiques.
  - H350                    Peut provoquer le cancer.
  - H335                    Peut irriter les voies respiratoires.
- **Conseils de prudence**
  - P210                    Tenir à l'écart de la chaleur/des étincelles/des flammes nues/des surfaces chaudes. - Ne pas fumer.
  - P241                    Utiliser du matériel électrique/de ventilation/d'éclairage/antidéflagrant.
  - P303+P361+P353    EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): enlever immédiatement les vêtements contaminés. Rincer la peau à l'eau/se doucher.
  - P305+P351+P338    EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
  - P322                    Mesures spécifiques (voir sur cette étiquette).
  - P405                    Garder sous clef.
  - P501                    Éliminer le contenu/réceptacle conformément à la réglementation locale/régionale/nationale/internationale.
- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### SECTION 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
75-56-9 oxyde de propylène
- **Code(s) d'identification**
- **Numéro CE:** 200-879-2
- **Numéro index:** 603-055-00-4

· **SVHC**

75-56-9	oxyde de propylène
---------	--------------------

FR

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### SECTION 4: Premiers secours

#### · 4.1 Description des premiers secours

##### · Remarques générales:

Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.

##### · Après inhalation:

Donner de l'air frais. Assistance respiratoire si nécessaire. Tenir le malade au chaud. Si les troubles persistent, consulter un médecin.

En cas d'inconscience, coucher et transporter la personne en position latérale stable.

##### · Après contact avec la peau: Laver immédiatement à l'eau et au savon et bien rincer.

##### · Après contact avec les yeux:

Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.

##### · Après ingestion: Consulter immédiatement un médecin.

#### · 4.2 Principaux symptômes et effets, aigus et différés Pas d'autres informations importantes disponibles.

#### · 4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires

Pas d'autres informations importantes disponibles.

### SECTION 5: Mesures de lutte contre l'incendie

#### · 5.1 Moyens d'extinction

##### · Moyens d'extinction:

CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.

#### · 5.2 Dangers particuliers résultant de la substance ou du mélange

Pas d'autres informations importantes disponibles.

#### · 5.3 Conseils aux pompiers

##### · Equipement spécial de sécurité: Porter un appareil de protection respiratoire.

### SECTION 6: Mesures à prendre en cas de dispersion accidentelle

#### · 6.1 Précautions individuelles, équipement de protection et procédures d'urgence

Porter un équipement de sécurité. Eloigner les personnes non protégées.

#### · 6.2 Précautions pour la protection de l'environnement:

Diluer avec beaucoup d'eau.

Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.

#### · 6.3 Méthodes et matériel de confinement et de nettoyage:

Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).

Evacuer les matériaux contaminés en tant que déchets conformément au point 13.

Assurer une aération suffisante.

#### · 6.4 Référence à d'autres sections

Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.

Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

#### · 7.1 Précautions à prendre pour une manipulation sans danger

Veiller à une bonne ventilation/aspiration du poste de travail.

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Ouvrir et manipuler les récipients avec précaution.

Eviter la formation d'aérosols.

**· Préventions des incendies et des explosions:**

Tenir à l'abri des sources d'inflammation - ne pas fumer.

Tenir à l'abri de la chaleur.

Prendre des mesures contre les charges électrostatiques.

Tenir des appareils de protection respiratoire prêts.

**· 7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**

**· Stockage:**

**· Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.

**· Indications concernant le stockage commun:** Pas nécessaire.

**· Autres indications sur les conditions de stockage:**

Tenir les emballages hermétiquement fermés.

Ne pas fermer les emballages de telle sorte qu'ils soient hermétiques aux gaz.

Stocker au frais et au sec dans des fûts bien fermés.

Protéger de la forte chaleur et du rayonnement direct du soleil.

**· 7.3 Utilisation(s) finale(s) particulière(s) Pas d'autres informations importantes disponibles.**

### SECTION 8: Contrôles de l'exposition/protection individuelle

**· Indications complémentaires pour l'agencement des installations techniques:**

Sans autre indication, voir point 7.

**· 8.1 Paramètres de contrôle**

**· Composants présentant des valeurs-seuil à surveiller par poste de travail:**

**75-56-9 oxyde de propylène**

VME	Valeur à long terme: 50 mg/m <sup>3</sup> , 20 ppm
	C1B, M1B

**· Remarques supplémentaires:**

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

**· 8.2 Contrôles de l'exposition**

**· Equipement de protection individuel:**

**· Mesures générales de protection et d'hygiène:**

Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.

Retirer immédiatement les vêtements souillés ou humectés.

Se laver les mains avant les pauses et en fin de travail.

Conserver à part les vêtements de protection.

Eviter tout contact avec les yeux et avec la peau.

**· Protection respiratoire:**

En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.

**· Protection des mains:**



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

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- **Matériau des gants**

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

- **Temps de pénétration du matériau des gants**

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

- **Protection des yeux:**



Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

- **9.1 Informations sur les propriétés physiques et chimiques essentielles**

- **Indications générales**

- **Aspect:**

<b>Forme:</b>	Liquide
<b>Couleur:</b>	Incolore
<b>Odeur:</b>	Genre éther
<b>Seuil olfactif:</b>	Non déterminé.

- **valeur du pH:** Non déterminé.

- **Changement d'état**

<b>Point de fusion:</b>	-111,9 °C
<b>Point d'ébullition:</b>	34 °C

- **Point d'éclair** -37 °C

- **Inflammabilité (solide, gazeux):** Non applicable.

- **Température d'inflammation:** 430 °C

- **Température de décomposition:** Non déterminé.

- **Auto-inflammation:** Non déterminé.

- **Danger d'explosion:** Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.

- **Limites d'explosion:**

<b>Inférieure:</b>	1,9 Vol %
<b>Supérieure:</b>	15 Vol %

- **Pression de vapeur à 20 °C:** 590 hPa

<b>Densité à 20 °C:</b>	0,8313 g/cm <sup>3</sup>
<b>Densité relative</b>	Non déterminé.
<b>Densité de vapeur.</b>	Non déterminé.
<b>Vitesse d'évaporation</b>	Non déterminé.

- **Solubilité dans/miscibilité avec l'eau à 20 °C:** 405 g/l

- **Coefficient de partage (n-octanol/eau):** Non déterminé.

- **Viscosité:**

**Dynamique:** Non déterminé.

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<b>Cinématique:</b>	Non déterminé.
<b>· Teneur en solvants:</b>	
<b>Solvants organiques:</b>	0,0 %
<b>VOC (CE)</b>	0,00 %
<b>· 9.2 Autres informations</b>	Pas d'autres informations importantes disponibles.

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë:**

<b>· Valeurs LD/LC50 déterminantes pour la classification:</b>		
<b>75-56-9 oxyde de propylène</b>		
Oral	LD50	380 mg/kg (rat)
Dermique	LD50	1245 mg/kg (lapin)

- **Effet primaire d'irritation:**
- **de la peau:** Irrite la peau et les muqueuses.
- **des yeux:** Effet d'irritation.
- **Sensibilisation:** Aucun effet de sensibilisation connu.
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**  
Muta. 1B, Carc. 1B

### SECTION 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 3 (D) (Classification propre): très polluant  
Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations, même pas en petite quantité.  
Danger pour l'eau potable dès fuite d'une quantité minime dans le sous-sol.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

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# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

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· **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### SECTION 13: Considérations relatives à l'élimination

· **13.1 Méthodes de traitement des déchets**· **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.· **Emballages non nettoyés:**· **Recommandation:** Evacuation conformément aux prescriptions légales.· **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

### SECTION 14: Informations relatives au transport

· **14.1 No ONU**· **ADR, IMDG, IATA**

UN1280

· **14.2 Nom d'expédition des Nations unies**· **ADR**· **IMDG, IATA**1280 OXYDE DE PROPYLÈNE  
PROPYLENE OXIDE· **14.3 Classe(s) de danger pour le transport**· **ADR, IMDG, IATA**· **Classe**

3 Liquides inflammables.

· **Étiquette**

3

· **14.4 Groupe d'emballage**· **ADR, IMDG, IATA**

I

· **14.5 Dangers pour l'environnement:**· **Marine Pollutant:**

Non

· **14.6 Précautions particulières à prendre par l'utilisateur**· **Indice Kemler:**· **No EMS:**

Attention: Liquides inflammables.

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F-E,S-D

· **14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC**

Non applicable.

· **Indications complémentaires de transport:**· **ADR**· **Quantités limitées (LQ)**· **Quantités exceptées (EQ)**

0

Code: E3

Quantité maximale nette par emballage intérieur: 30 ml

Quantité maximale nette par emballage extérieur: 300

ml

· **Catégorie de transport**

1

· **Code de restriction en tunnels**

D/E

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· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· <b>"Règlement type" de l'ONU:</b>	UN1280, OXYDE DE PROPYLÈNE, 3, I

### SECTION 15: Informations réglementaires

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
  - **Prescriptions nationales:**
  - **Indications sur les restrictions de travail:**  
Le personnel ne doit pas être exposé à cette substance dangereuse. Les autorités peuvent autoriser des exceptions dans des cas particuliers.
  - **Autres prescriptions, restrictions et règlements d'interdiction**
  - **Substances extrêmement préoccupantes (SVHC) selon REACH, article 57**
- |         |                    |
|---------|--------------------|
| 75-56-9 | oxyde de propylène |
|---------|--------------------|
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

### SECTION 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- **Acronymes et abréviations:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Flam. Liq. 1: Flammable liquids, Hazard Category 1  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
Carc. 1B: Carcinogenicity, Hazard Category 1B  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

# Sicherheitsdatenblatt

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### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname: PROPYLENE OXIDE**
- **Artikelnummer:** 20410
- **CAS-Nummer:**  
75-56-9
- **EG-Nummer:**  
200-879-2
- **Indexnummer:**  
603-055-00-4
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**  
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: [info@emsdiasum.com](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://www.emsdiasum.com)  
  
Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
[safety@scienceservices.de](mailto:safety@scienceservices.de)  
  
24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - [www.toxinfo.org](http://www.toxinfo.org)
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 1 H224 Flüssigkeit und Dampf extrem entzündbar.



GHS08 Gesundheitsgefahr

Muta. 1B H340 Kann genetische Defekte verursachen.

Carc. 1B H350 Kann Krebs erzeugen.

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GHS07

Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.  
 Acute Tox. 4 H312 Gesundheitsschädlich bei Hautkontakt.  
 Acute Tox. 4 H332 Gesundheitsschädlich bei Einatmen.  
 Skin Irrit. 2 H315 Verursacht Hautreizungen.  
 Eye Irrit. 2 H319 Verursacht schwere Augenreizung.  
 STOT SE 3 H335 Kann die Atemwege reizen.

### · 2.2 Kennzeichnungselemente

#### · Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

#### · Gefahrenpiktogramme



GHS02

GHS07

GHS08

#### · Signalwort Gefahr

#### · Gefahrbestimmende Komponenten zur Etikettierung:

Propylenoxid

#### · Gefahrenhinweise

H224 Flüssigkeit und Dampf extrem entzündbar.  
 H302+H312+H332 Gesundheitsschädlich bei Verschlucken, Hautkontakt oder Einatmen.  
 H315 Verursacht Hautreizungen.  
 H319 Verursacht schwere Augenreizung.  
 H340 Kann genetische Defekte verursachen.  
 H350 Kann Krebs erzeugen.  
 H335 Kann die Atemwege reizen.

#### · Sicherheitshinweise

P210 Von Hitze/Funken/offener Flamme/heißen Oberflächen fernhalten. Nicht rauchen.  
 P241 Explosionsgeschützte elektrische Betriebsmittel/Lüftungsanlagen/Beleuchtung verwenden.  
 P303+P361+P353 BEI KONTAKT MIT DER HAUT (oder dem Haar): Alle verschmutzten, getränkten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.  
 P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.  
 P322 Gezielte Maßnahmen (siehe auf diesem Kennzeichnungsetikett).  
 P405 Unter Verschluss aufbewahren.  
 P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

#### · Zusätzliche Angaben:

Nur für gewerbliche Anwender.

#### · 2.3 Sonstige Gefahren

#### · Ergebnisse der PBT- und vPvB-Beurteilung

· PBT: Nicht anwendbar.

· vPvB: Nicht anwendbar.

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### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

- **3.1 Chemische Charakterisierung: Stoffe**
- **CAS-Nr. Bezeichnung**  
75-56-9 Propylenoxid
- **Identifikationsnummer(n)**
- **EG-Nummer:** 200-879-2
- **Indexnummer:** 603-055-00-4

· **SVHC**

75-56-9 Propylenoxid

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
- **Allgemeine Hinweise:**  
Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.
- **Nach Einatmen:**  
Frischlufzufuhr, gegebenenfalls Atemspende, Wärme. Bei anhaltenden Beschwerden Arzt konsultieren.  
Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.
- **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.
- **Nach Augenkontakt:**  
Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.
- **Nach Verschlucken:** Sofort Arzt aufsuchen.
- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**  
Keine weiteren relevanten Informationen verfügbar.
- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**  
Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**  
CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Atemschutzgerät anlegen.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:**  
Mit viel Wasser verdünnen.  
Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.

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*Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.*

*Für ausreichende Lüftung sorgen.*

**· 6.4 Verweis auf andere Abschnitte**

*Informationen zur sicheren Handhabung siehe Abschnitt 7.*

*Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.*

*Informationen zur Entsorgung siehe Abschnitt 13.*

### ABSCHNITT 7: Handhabung und Lagerung

**· 7.1 Schutzmaßnahmen zur sicheren Handhabung**

*Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.*

*Behälter mit Vorsicht öffnen und handhaben.*

*Aerosolbildung vermeiden.*

**· Hinweise zum Brand- und Explosionsschutz:**

*Zündquellen fernhalten - nicht rauchen.*

*Vor Hitze schützen.*

*Maßnahmen gegen elektrostatische Aufladung treffen.*

*Atemschutzgeräte bereithalten.*

**· 7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**

**· Lagerung:**

**· Anforderung an Lagerräume und Behälter:** *An einem kühlen Ort lagern.*

**· Zusammenlagerungshinweise:** *Nicht erforderlich.*

**· Weitere Angaben zu den Lagerbedingungen:**

*Behälter dicht geschlossen halten.*

*Behälter nicht gasdicht verschließen.*

*In gut verschlossenen Gebinden kühl und trocken lagern.*

*Vor Hitze und direkter Sonnenbestrahlung schützen.*

**· Lagerklasse:**

**· Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** *Hochentzündlich*

**· 7.3 Spezifische Endanwendungen** *Keine weiteren relevanten Informationen verfügbar.*

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

**· Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** *Keine weiteren Angaben, siehe Abschnitt 7.*

**· 8.1 Zu überwachende Parameter**

**· Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

**75-56-9 Propylenoxid**

AGW Langzeitwert: 4,8 mg/m<sup>3</sup>, 2 ml/m<sup>3</sup>

2 (I); AGS, X, Y, Sh

**· Zusätzliche Hinweise:** *Als Grundlage dienen die bei der Erstellung gültigen Listen.*

**· 8.2 Begrenzung und Überwachung der Exposition**

**· Persönliche Schutzausrüstung:**

**· Allgemeine Schutz- und Hygienemaßnahmen:**

*Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.*

*Beschmutzte, getränkte Kleidung sofort ausziehen.*

*Vor den Pausen und bei Arbeitsende Hände waschen.*

*Getrennte Aufbewahrung der Schutzkleidung.*

*Berührung mit den Augen und der Haut vermeiden.*

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**· Atemschutz:**

Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.

**· Handschutz:**

Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

**· Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

**· Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

**· Augenschutz:**

Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

**· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften****· Allgemeine Angaben****· Aussehen:**

**Form:** Flüssigkeit

**Farbe:** Farblos

**· Geruch:** Etherartig

**· Geruchsschwelle:** Nicht bestimmt.

**· pH-Wert:** Nicht bestimmt.

**· Zustandsänderung**

**Schmelzpunkt/Schmelzbereich:** -111,9 °C

**Siedepunkt/Siedebereich:** 34 °C

**· Flammpunkt:** -37 °C

**· Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.

**· Zündtemperatur:** 430 °C

**· Zersetzungstemperatur:** Nicht bestimmt.

**· Selbstentzündlichkeit:** Nicht bestimmt.

**· Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.

**· Explosionsgrenzen:**

**Untere:** 1,9 Vol %

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<b>Obere:</b>	15 Vol %
· <b>Dampfdruck bei 20 °C:</b>	590 hPa
· <b>Dichte bei 20 °C:</b>	0,8313 g/cm <sup>3</sup>
· <b>Relative Dichte</b>	Nicht bestimmt.
· <b>Dampfdichte</b>	Nicht bestimmt.
· <b>Verdampfungsgeschwindigkeit</b>	Nicht bestimmt.
· <b>Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C:</b>	405 g/l
· <b>Verteilungskoeffizient (n-Octanol/Wasser):</b>	Nicht bestimmt.
· <b>Viskosität:</b>	
<b>Dynamisch:</b>	Nicht bestimmt.
<b>Kinematisch:</b>	Nicht bestimmt.
· <b>Lösemittelgehalt:</b>	
<b>Organische Lösemittel:</b>	0,0 %
<b>VOC (EU)</b>	0,00 %
· <b>9.2 Sonstige Angaben</b>	Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität:**

· <b>Einstufungsrelevante LD/LC50-Werte:</b>		
<b>75-56-9 Propylenoxid</b>		
Oral	LD50	380 mg/kg (rat)
Dermal	LD50	1245 mg/kg (rabbit)

- **Primäre Reizwirkung:**
- **an der Haut:** Reizt die Haut und die Schleimhäute.
- **am Auge:** Reizwirkung.
- **Sensibilisierung:** Keine sensibilisierende Wirkung bekannt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**  
Muta. 1B, Carc. 1B

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### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 3 (Selbsteinstufung): stark wassergefährdend  
Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen, auch nicht in kleinen Mengen.  
Trinkwassergefährdung bereits beim Auslaufen geringster Mengen in den Untergrund.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
- **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

### ABSCHNITT 14: Angaben zum Transport

<ul style="list-style-type: none"> <li>· <b>14.1 UN-Nummer</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<p style="margin: 0;">UN1280</p>	
<ul style="list-style-type: none"> <li>· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>	<p style="margin: 0;">1280 PROPYLENOXID PROPYLENE OXIDE</p>	
<ul style="list-style-type: none"> <li>· <b>14.3 Transportgefahrenklassen</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> <li>· <b>Klasse</b></li> <li>· <b>Gefahrzettel</b></li> </ul>	<p style="margin: 0;">3 Entzündbare flüssige Stoffe 3</p>
<ul style="list-style-type: none"> <li>· <b>14.4 Verpackungsgruppe</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>	<p style="margin: 0;">I</p>	
<ul style="list-style-type: none"> <li>· <b>14.5 Umweltgefahren:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>	<p style="margin: 0;">Nein</p>	
<ul style="list-style-type: none"> <li>· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b></li> <li>· <b>Kemler-Zahl:</b></li> </ul>	<p style="margin: 0;">Achtung: Entzündbare flüssige Stoffe 339</p>	

(Fortsetzung auf Seite 8)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 19.05.2015

überarbeitet am: 19.05.2015

**Handelsname: PROPYLENE OXIDE**

(Fortsetzung von Seite 7)

· <b>EMS-Nummer:</b>	F-E,S-D
· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code</b>	Nicht anwendbar.
· <b>Transport/weitere Angaben:</b>	
· <b>ADR</b>	
· <b>Begrenzte Menge (LQ)</b>	0
· <b>Freigestellte Mengen (EQ)</b>	Code: E3 Höchste Nettomenge je Innenverpackung: 30 ml Höchste Nettomenge je Außenverpackung: 300 ml
· <b>Beförderungskategorie</b>	1
· <b>Tunnelbeschränkungscode</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· <b>UN "Model Regulation":</b>	UN1280, PROPYLENOXID, 3, 1

### ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Nationale Vorschriften:**
- **Hinweise zur Beschäftigungsbeschränkung:**  
Arbeitnehmer dürfen diesem Gefahrstoff nicht ausgesetzt sein. Im Einzelfall kann die Behörde Ausnahmen zulassen.
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Hochentzündlich
- **Technische Anleitung Luft:**

Klasse	Anteil in %
III	100,0

- **Wassergefährdungsklasse:** WGK 3 (Selbsteinstufung): stark wassergefährdend.
- **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**

· **Besonders besorgniserregende Stoffe (SVHC) gemäß REACH, Artikel 57**

75-56-9	Propylenoxid
---------	--------------

- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

(Fortsetzung auf Seite 9)

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(Fortsetzung von Seite 8)

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**Flam. Liq. 1: Flammable liquids, Hazard Category 1**Acute Tox. 4: Acute toxicity, Hazard Category 4**Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2**Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2**Muta. 1B: Germ cell mutagenicity, Hazard Category 1B**Carc. 1B: Carcinogenicity, Hazard Category 1B**STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

DE

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 19.05.2015

Revisione: 19.05.2015

### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** PROPYLENE OXIDE

· **Articolo numero:** 20410

· **Numero CAS:**

75-56-9

· **Numeri CE:**

200-879-2

· **Numero indice:**

603-055-00-4

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 1 H224 Liquido e vapori altamente infiammabili.



GHS08 pericolo per la salute

Muta. 1B H340 Può provocare alterazioni genetiche.

Carc. 1B H350 Può provocare il cancro.



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

Acute Tox. 4 H312 Nocivo per contatto con la pelle.

(continua a pagina 2)

**Scheda di dati di sicurezza**  
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**Denominazione commerciale: PROPYLENE OXIDE**

(Segue da pagina 1)

Acute Tox. 4 H332 Nocivo se inalato.  
 Skin Irrit. 2 H315 Provoca irritazione cutanea.  
 Eye Irrit. 2 H319 Provoca grave irritazione oculare.  
 STOT SE 3 H335 Può irritare le vie respiratorie.

**2.2 Elementi dell'etichetta****Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

**Pittogrammi di pericolo**

GHS02 GHS07 GHS08

**Avvertenza Pericolo****Componenti pericolosi che ne determinano l'etichettatura:**

ossido di propilene

**Indicazioni di pericolo**

H224 Liquido e vapori altamente infiammabili.  
 H302+H312+H332 Nocivo se ingerito, a contatto con la pelle o se inalato.  
 H315 Provoca irritazione cutanea.  
 H319 Provoca grave irritazione oculare.  
 H340 Può provocare alterazioni genetiche.  
 H350 Può provocare il cancro.  
 H335 Può irritare le vie respiratorie.

**Consigli di prudenza**

P210 Tenere lontano da fonti di calore/scintille/fiamme libere/superfici riscaldate. - Non fumare.  
 P241 Utilizzare impianti elettrici/di ventilazione/d'illuminazione/a prova di esplosione.  
 P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.  
 P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.  
 P322 Misure specifiche (vedere su questa etichetta).  
 P405 Conservare sotto chiave.  
 P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

**2.3 Altri pericoli****Risultati della valutazione PBT e vPvB**· **PBT:** Non applicabile.· **vPvB:** Non applicabile.**SEZIONE 3: Composizione/informazioni sugli ingredienti****3.1 Caratteristiche chimiche: Sostanze****Numero CAS**

75-56-9 ossido di propilene

**Numeroli di identificazione**· **Numeri CE:** 200-879-2· **Numero indice:** 603-055-00-4

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**Scheda di dati di sicurezza**  
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**Denominazione commerciale: PROPYLENE OXIDE**

(Segue da pagina 2)

· SVHC

75-56-9 ossido di propilene

#### **SEZIONE 4: Misure di primo soccorso**

· **4.1 Descrizione delle misure di primo soccorso**

· **Indicazioni generali:**

*I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.*

· **Inalazione:**

*Portare in zona ben areata, praticare eventualmente la respirazione artificiale, tenere al caldo. Se i disturbi persistono consultare il medico.*

*Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.*

· **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.

· **Contatto con gli occhi:**

*Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte. Se persiste il dolore consultare il medico.*

· **Ingestione:** Chiamare subito il medico.

· **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.

· **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**

*Non sono disponibili altre informazioni.*

#### **SEZIONE 5: Misure antincendio**

· **5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:**

*CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.*

· **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.

· **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**

· **Mezzi protettivi specifici:** Indossare il respiratore.

#### **SEZIONE 6: Misure in caso di rilascio accidentale**

· **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**

*Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.*

· **6.2 Precauzioni ambientali:**

*Diluire abbondantemente con acqua.*

*Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.*

· **6.3 Metodi e materiali per il contenimento e per la bonifica:**

*Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).*

*Smaltimento del materiale contaminato conformemente al punto 13.*

*Provvedere ad una sufficiente areazione.*

· **6.4 Riferimento ad altre sezioni**

*Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.*

*Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.*

*Per informazioni relative allo smaltimento vedere Capitolo 13.*

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(continua a pagina 4)

**Scheda di dati di sicurezza**  
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Denominazione commerciale: **PROPYLENE OXIDE**

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### SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**  
Accurata ventilazione/aspirazione nei luoghi di lavoro.  
Aprire e manipolare i recipienti con cautela.  
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:**  
Tenere lontano da fonti di calore, non fumare.  
Proteggere dal calore.  
Adottare provvedimenti contro cariche elettrostatiche.  
Tener pronto il respiratore.
- **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Conservare in ambiente fresco.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**  
Mantenere i recipienti ermeticamente chiusi.  
Chiudere i recipienti non a tenuta di gas.  
Conservare in luogo fresco e asciutto in fusti ben chiusi.  
Proteggere dal calore e dai raggi diretti del sole.
- **7.3 Usi finali specifici** Non sono disponibili altre informazioni.

### SEZIONE 8: Controllo dell'esposizione/protezione individuale

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

- **8.1 Parametri di controllo**

- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

**75-56-9 ossido di propilene**

TWA	Valore a lungo termine: 4,8 mg/m <sup>3</sup> , 2 ppm
sen, A3	

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

- **8.2 Controlli dell'esposizione**

- **Mezzi protettivi individuali:**

- **Norme generali protettive e di igiene del lavoro:**

- Tenere lontano da cibo, bevande e foraggi.
- Togliere immediatamente gli abiti contaminati.
- Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- Custodire separatamente l'equipaggiamento protettivo.
- Evitare il contatto con gli occhi e la pelle.

- **Maschera protettiva:**

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

- **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

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**Scheda di dati di sicurezza**  
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A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

· **Occhiali protettivi:**



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

· **9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali**

· **Indicazioni generali**

· **Aspetto:**

· <b>Forma:</b>	Liquido
· <b>Colore:</b>	Incolore
· <b>Odore:</b>	Simile all'etere
· <b>Soglia olfattiva:</b>	Non definito.

· **valori di pH:** Non definito.

· **Cambiamento di stato**

· <b>Temperatura di fusione/ambito di fusione:</b>	-111,9 °C
· <b>Temperatura di ebollizione/ambito di ebollizione:</b>	34 °C

· **Punto di infiammabilità:** -37 °C

· **Infiammabilità (solido, gassoso):** Non applicabile.

· **Temperatura di accensione:** 430 °C

· **Temperatura di decomposizione:** Non definito.

· **Autoaccensione:** Non definito.

· **Pericolo di esplosione:** Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.

· **Limiti di infiammabilità:**

· <b>Inferiore:</b>	1,9 Vol %
· <b>Superiore:</b>	15 Vol %

· **Tensione di vapore a 20 °C:** 590 hPa

· **Densità a 20 °C:** 0,8313 g/cm<sup>3</sup>

· **Densità relativa** Non definito.

· **Densità del vapore** Non definito.

· **Velocità di evaporazione** Non definito.

· **Solubilità in/Miscibilità con acqua a 20 °C:** 405 g/l

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**Denominazione commerciale: PROPYLENE OXIDE**

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- |   |  |
|---|--|
| · <b>Coefficiente di distribuzione (n-Octanol/acqua):</b> | Non definito.                            |
| · <b>Viscosità:</b>                                       |  |
| <b>Dinamica:</b>  | Non definito.                            |
| <b>Cinematica:</b>  | Non definito.                            |
| · <b>Tenore del solvente:</b>                             |  |
| <b>Solventi organici:</b>                                 | 0,0 %                                    |
| <b>VOC (CE)</b>   | 0,00 %                                   |
| · <b>9.2 Altre informazioni</b>                           | Non sono disponibili altre informazioni. |

### SEZIONE 10: Stabilità e reattività

- **10.1 Reattività**
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta:**

- **Valori LD/LC50 rilevanti per la classificazione:**

**75-56-9 ossido di propilene**

Orale	LD50	380 mg/kg (rat)
Cutaneo	LD50	1245 mg/kg (rabbit)

- **Irritabilità primaria:**
- **sulla pelle:** Irrita la pelle e le mucose.
- **sugli occhi:** Irritante.
- **Sensibilizzazione:** Non si conoscono effetti sensibilizzanti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**  
Muta. 1B, Carc. 1B

### SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 3 (D) (Autoclassificazione): molto pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature, anche in piccole dosi.  
Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di quantità minime di prodotto.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.

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- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

### SEZIONE 14: Informazioni sul trasporto

- |   |   |
|---|---|
| · <b>14.1 Numero ONU</b>  |   |
| · <b>ADR, IMDG, IATA</b>  | UN1280  |
| · <b>14.2 Nome di spedizione dell'ONU</b>   |   |
| · <b>ADR</b>  | 1280 OSSIDO DI PROPYLENE  |
| · <b>IMDG, IATA</b>   | PROPYLENE OXIDE   |
| · <b>14.3 Classi di pericolo connesso al trasporto</b>                                    |   |
| · <b>ADR, IMDG, IATA</b>  |   |
|   |    |
| · <b>Classe</b>   | 3 Liquidi infiammabili  |
| · <b>Etichetta</b>  | 3   |
| · <b>14.4 Gruppo di imballaggio</b>   |   |
| · <b>ADR, IMDG, IATA</b>  | I   |
| · <b>14.5 Pericoli per l'ambiente:</b>  |   |
| · <b>Marine pollutant:</b>  | No  |
| · <b>14.6 Precauzioni speciali per gli utilizzatori</b>                                   | Attenzione: Liquidi infiammabili  |
| · <b>Numero Kemler:</b>   | 339   |
| · <b>Numero EMS:</b>  | F-E,S-D   |
| · <b>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC</b> | Non applicabile.  |
| · <b>Trasporto/ulteriori indicazioni:</b>   |   |
| · <b>ADR</b>  |   |
| · <b>Quantità limitate (LQ)</b>   | 0   |
| · <b>Quantità esenti (EQ)</b>   | Codice: E3<br>Quantità massima netta per imballaggio interno: 30 ml<br>Quantità massima netta per imballaggio esterno: 300 ml |
| · <b>Categoria di trasporto</b>   | 1   |
| · <b>Codice di restrizione in galleria</b>  | D/E   |

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**Scheda di dati di sicurezza**  
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**Denominazione commerciale: PROPYLENE OXIDE**

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· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· <b>UN "Model Regulation":</b>	UN1280, OSSIDO DI PROPYLENE, 3, I

### SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
  - **Disposizioni nazionali:**
  - **Indicazioni relative alla limitazione delle attività lavorative:**  
 Il personale non deve essere esposto a questa sostanza pericolosa L'autorità può ammettere nei singoli casi delle eccezioni.
  - **Ulteriori disposizioni, limitazioni e decreti proibitivi**
  - **Sostanze estremamente preoccupanti (SVHC) ai sensi della regolamento REACH, articolo 57**
- |         |                     |
|---------|---------------------|
| 75-56-9 | ossido di propilene |
|---------|---------------------|
- **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

- **Abbreviazioni e acronimi:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 Flam. Liq. 1: Flammable liquids, Hazard Category 1  
 Acute Tox. 4: Acute toxicity, Hazard Category 4  
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
 Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
 Carc. 1B: Carcinogenicity, Hazard Category 1B  
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3



# 안전지침서

## 제조소의 조약 2007/2006/EC에 따라 따라

기압점: 2015.05.19

개정: 2015.05.19

### 제품명: PROPYLENE OXIDE

(1 쪽부터 계속)

- 피부 부식성/자극성 구분2 H315 피부에 자극을 일으킴
- 심한 눈 손상/자극성 구분2 H319 눈에 심한 자극을 일으킴
- 표적장기-1회노출 구분3 H335 호흡기계 자극을 일으킬 수 있음

#### 라벨표기

· 라벨 표기 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

#### 그림문자



#### 신호어

· 상 표 상에 명확히 위험성이 표시된 성분:

propylene oxide

#### 유해. 위험

- 극산화성 액체 및 증기
- 삼키거나 피부에 접촉하거나 흡입하면 유해함.
- 피부에 자극을 일으킴
- 눈에 심한 자극을 일으킴
- 유전적인 결함을 일으킬 수 있음
- 암을 일으킬 수 있음
- 호흡기계 자극을 일으킬 수 있음

#### 예방 조치

- 열스파크, 화염, 고열로부터 멀리하십시오 - 금연
- 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으십시오/샤워하십시오.
- 눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으십시오.
- (라벨 참조) 처치를 하십시오.
- 잠금장치가 있는 저장장소에 저장하십시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

#### 기타 정보

- 극산화성 액체 및 증기
- 진폭형 잔류성 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능
- 산물 생성 가능

## 3 구성성분의 명칭 및 함유량

- 화학적 성질
- 화학물질
- 화학물질
- 화학물질
- 번호 81번 표시번호 75-56-9 propylene oxide
- 식별식별 번호
- 의 번호 79-2
- 색인색인 번호: 603-055-00-4

## 4 응급조치 요령

- 응급조치 요령 내용
- 일 반 정보
- 중 독 증 상 은 몇 시 간 이 지 난 뒤 에 발 생 할 수 있 다. 따 라 서 사 고 가 발 생 한 후 에 적 어 도 48 시 간 동 안 은 의 료 진 의 관 찰 을 받 아 야 한 다.

(3 쪽에 계속)



# 안전지침서

## 제제제조업의 1997/2006/E에 따라

기압점: 2015.05.19

개정: 2015.05.19

### 제품명: PYLENE OXIDE

(2 쪽부터 계속)

#### 흡입했을 흡입했을 흡입했을

신선한 공기를 쐬고, 필요할 경우에는 산소 호흡기의 도움을 받는다. 환자를 따뜻하게 하고, 증상이 지속될 경우에는 의료진의 도움을 구한다.

환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.

#### 피부에 피부에 피부에

눈에 눈에 눈에

먹었을 먹었을 먹었을 시 의사의 도움을 구한다.

가장 중요한 것은 의학적 정보가 존재하지 않습니다.

즉각적인 즉각적인 즉각적인 조치를 취할 필요가 없습니다. 즉각적인 정보가 존재하지 않습니다.

### 5 폭발.화재시 대처방법

#### 소화제 소화제 소화제

#### 적절한 적절한 적절한

이산화탄소, 진화용 석회가루 또는 물방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.

본본 화학물질이나 혼합물에서 발생되는 위험을 평가하여 성유해성 정보가 존재하지 않습니다.

#### 소방관에 소방관에 소방관에

화재 화재 화재

### 6 누출 사고 시 대처방법

개인 개인 개인

#### 환경 환경 환경

많은 물로 희석 시킨다.  
하수도망/해수면위의물/지하수로도달하지않게한다.

#### 밀폐 밀폐 밀폐

액체가 혼합된 물질(모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.  
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.  
충분한 환기가 되도록 한다.

#### 대기 대기 대기

안전 관리에 대한 정보는 제7 장을 참고하십시오.  
개인 보호 장비에 대한 정보는 제8 장을 참고하십시오.  
쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

### 7 취급 및 저장방법

#### 안전 안전 안전

작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.  
조심스럽게 용기를 개봉하거나 취급한다.  
연무질이 형성되는 것을 피한다.

#### 화재 화재 화재

발화 요소는 멀리 둔다. 금연.  
열로부터 보호한다.  
정전기의 충전으로부터 보호한다.  
호흡 보호장비를 항상 비치한다.

#### 혼합 위험성 혼합 위험성 혼합 위험성

보관 보관 보관  
안전한 안전한 안전한  
하나의 하나

(4 쪽에 계속)

# 안전지침서

## 제외조의 1997/2006/EC에 따라 따라

기압점: 2015.05.19

개정: 2015.05.19

제품명: **PROPYLENE OXIDE**

(3 쪽부터 계속)

- **보관 조건**에 관한 추가적인 정보:
  - 용기를 새지 않게 밀폐한 채 보관한다.
  - 용기를 가스가 새지 않게 밀폐시킨다.
  - 밀폐된 용기속에서 늘하고 건조하게 보관한다.
  - 열이나 직사광선으로부터 보호한다.

구체적 구조 정보에 대한 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

첨단 시설이나 시설에서 작업하는 동안에 충분한 정보 추가 정보의 자료는 없음. 항목 7을 참고하십시오.

통제 물질의 수량 변수

- 화학 물질의 노출 기준, 생물학적 노출 기준, 생물학적 노출 기준

**75-56-9 propylene oxide**

TLV (ROK)	장기간의 값: 5 mg/m <sup>3</sup> , 2 ppm
PEL (USA)	장기간의 값: 240 mg/m <sup>3</sup> , 100 ppm
REL (USA)	See Pocket Guide App. A
TLV (USA)	장기간의 값: 4.8 mg/m <sup>3</sup> , 2 ppm
	DSEN

- 추가 정보: 정보 할 당시에 유효한 목록을 기초로 사용했다.

노출 통제 통제

개인 보호구

- **일반적 보호 조치 및 위생 조치:**
  - 식료품, 음료수와 사료로부터 멀리 떨어져 놓는다.
  - 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.
  - 휴식 전이나 작업이 끝날 때마다 손을 씻는다.
  - 방호복은 따로 보관한다.
  - 눈과 피부와의 접촉은 피한다.

호흡기 보호

단시간 또는 경미한 오염의 경우에는 호흡 여과기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.

보호 보호



보호용 장갑

장갑재질은 제품 / 원료 / 조제를 통과시키지 않아야 하고, 내구성이 있어야 한다. 테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합물에 적합한 장갑재질에 대한 추천이 없다. 통과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· 장갑의 재료

적합한 장갑의 선정은 재질 차이뿐만 아니라 품질 기준의 차이도 고려하여 이루어져야 하고 제조업자에 따라서도 다르게 선정되어야 한다.

- 장갑 재질과 사용 시간: 정확한 관통 시간은 보호장갑 제조자에 의해서 인지도되고, 준수되어야 한다.

(5 쪽에 계속)

# 안전지침서

## 제외조의조 901/2006/EC에 따라따라

기압점: 2015.05.19

개정: 2015.05.19

제품명: **제외조** PYLENE OXIDE

**보호 보호 보호**

(4 쪽부터계속)



꼭조이는보안경

### 9 물리화학적 특성

**기본 정보** (물리화학적 특성) (특히 화재 위험) (일반 정보)

일반정보 일반정보 일반정보

외형외형외형

물리적물리적물리적 상태

액체

색:

색소가없는

냄새냄새냄새

에테르종류의

후각역치후각역치후각역치

알맞지않다.

· pH:

알맞지않다.

상태변화상태변화상태변화

녹는점녹는점녹는점

-111.9 °C

끓는점끓는점끓는점

34 °C

인화점인화점인화점

-37 °C

인화성인화성인화성

해당사항 없음.

점화온도점화온도점화온도

430 °C

분해분해분해 온도

알맞지않다.

자기점화자기점화자기점화

알맞지않다.

폭발위험폭발위험폭발위험

이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

인화안화안화안화

아래로아래로아래로

1.9 Vol %

위로위로위로

15 Vol %

증기압 증기압 증기압

590 hPa

밀도밀도밀도

0.8313 g/cm<sup>3</sup>

비중비중비중

알맞지않다.

증기밀도증기밀도증기밀도

알맞지않다.

증발증발증발 속도

알맞지않다.

용해도용해도용해도

의경우의경우의경우

405 g/l

옥탄율 옥탄율 옥탄율

알맞지않다.

점도점도점도

역학성역학성역학성

알맞지않다.

동점성동점성동점성

알맞지않다.

· 용매내용물

유기용매유기용매유기용매

0.0 %

VOC (EU)

0.00 %

(6 쪽에계속)



# 안전지침서

제외조의조 2017/2006/EC에 따라따라

기압점: 2015.05.19

개정: 2015.05.19

제품명: **염화프로필렌 옥사이드 (PROPYLENE OXIDE)**

(6 쪽부터계속)


### 13 폐기시 주의사항

**폐기물 폐기물 처리 방법**  
 권고 권고 환경 쓰레기와 함께 처리되어서는 안된다. 하수도망으로유입되어서는 안된다.

**비위생적비위생적 위험성**  
 권고 권고 잔류물지침에입각한쓰레기처리.

**수질오염**  
 수질오염에따라서세제가첨가된물

### 14 운송에 필요한 정보

유엔 유엔 번호 · ADR, IMDG, IATA	UN1280
위험물 위험물 명칭 · ADR · IMDG, IATA	1280 PROPYLENE OXIDE PROPYLENE OXIDE
교통 교통 위험 클래스 · ADR, IMDG, IATA	
	
등급 등급 위험물 위험물 번호	3 발화성용액 3
용기 등급 용기 등급 · ADR, IMDG, IATA	I
환경 환경 · 해양오염물질:	아니오
이용자 이용자 위험 위험 코드 · 번호 번호	경고: 발화성용액 339 F-E,S-D
· MARPOL73/78(선박으로부터의 해양오염방지협 부속부속서부속부속 C Code(국제 선적화물코드)에 따따따따따	해당사항 없음.
· 운송/ 추가 추가 정보	
· ADR 한정 한정 · Excepted quantities (EQ)	0 Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
운송 운송 터널 터널 코드	1 D/E
· IMDG · Limited quantities (LQ)	0

(8 쪽에계속)

KR

# 안전지침서

제외조의 1907/2006/EC에 따라 따라

기압점: 2015.05.19

개정: 2015.05.19

제품명: **PROPYLENE OXIDE**

(7 쪽부터 계속)

· Excepted quantities (EQ)

Code: E3

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 300 ml

· UN번호: 1280

UN1280, PROPYLENE OXIDE, 3, I

## 15 법적 규제 현황

해당 화학물질은 물질안전보건자료에 기재된 용도에만 사용할 수 있으며, 다른 용도로는 사용하지 않습니다.

· Korean Existing Chemical Inventory

75-56-9 propylene oxide

KE-24565

· 라벨 라벨링 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

위험 위험도표



GHS02 GHS07 GHS08

표지어 표지어 표지어

· 상표상에 명확히 위험성이 표시된 성분:

propylene oxide

위험 위험도표 문구

- 극산화성 액체 및 증기
- 삼키거나 피부에 접촉하거나 흡입하면 유해함.
- 피부에 자극을 일으킴
- 눈에 심한 자극을 일으킴
- 유전적인 결함을 일으킬 수 있음
- 암을 일으킬 수 있음
- 호흡기계 자극을 일으킬 수 있음

주의 주의문구

- 열·스파크·화염·고열로부터 멀리하십시오 - 금연
- 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오.
- 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.
- (라벨 참조) 처치를 하시오.
- 잠금장치가 있는 저장장소에 저장하십시오.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

국내 규정 국내 규정 국내 규정

· 사용 제한에 대한 정보

노동자들은 이러한 위험물질을 내버리지 말아야 한다. 개별적인 경우에 관청은 예외를 허가할 수 있다.

화학물질 안전성 평가가 수행되지 않음

## 16 그 밖의 참고사항

이 보고서는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다, 하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

최초 작성 일자: 2015.05.19

개정 일자: 2015.05.19

(9 쪽에 계속)

# 안전지침서

## 제외조의 1907/2006/EC에 따라 따라

기압점: 2015.05.19

개정: 2015.05.19

제품명: **염화비닐 PYLENE OXIDE**

(8 쪽부터 계속)

**약어와 약어와 표준어와 어두문자어**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- EINECS: European Inventory of Existing Commercial Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- 인화성 액체   구분1: Flammable liquids, Hazard Category 1
- 급성 독성(경구)   구분4: Acute toxicity, Hazard Category 4
- 피부 부식성/자극성   구분2: Skin corrosion/irritation, Hazard Category 2
- 심한 눈 손상/자극성   구분2: Serious eye damage/eye irritation, Hazard Category 2
- 생식세포 변이원성   구분1B: Germ cell mutagenicity, Hazard Category 1B
- 발암성   구분1B: Carcinogenicity, Hazard Category 1B
- 표적장기-1회노출   구분3: Specific target organ toxicity - Single exposure, Hazard Category 3

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**Ficha de dados de segurança**  
**Em conformidade com 1907/2006/CE, Artigo 31.º**

data da impressão 19.05.2015

Revisão: 19.05.2015

### SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

- **1.1 Identificador do produto**
- **Nome comercial:** PROPYLENE OXIDE
- **Código do produto:** 20410
- **Nº CAS:**  
75-56-9
- **Número CE:**  
200-879-2
- **Número de índice:**  
603-055-00-4
- **1.2 Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas**  
Não existe mais nenhuma informação relevante disponível.
- **Utilização da substância / da preparação** Químicos de laboratório
- **1.3 Identificação do fornecedor da ficha de dados de segurança**
- **Fabricante/fornecedor:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Entidade para obtenção de informações adicionais:** Product safety department
- **1.4 Número de telefone de emergência:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECÇÃO 2: Identificação dos perigos

- **2.1 Classificação da substância ou mistura**
- **Classificação em conformidade com o Regulamento (CE) n.º 1272/2008**



GHS02 chama

Flam. Liq. 1 H224 Líquido e vapor extremamente inflamáveis.



GHS08 perigo para a saúde

Muta. 1B H340 Pode provocar anomalias genéticas.

Carc. 1B H350 Pode provocar cancro.



GHS07

Acute Tox. 4 H302 Nocivo por ingestão.

Acute Tox. 4 H312 Nocivo em contacto com a pele.

Acute Tox. 4 H332 Nocivo por inalação.

Skin Irrit. 2 H315 Provoca irritação cutânea.

Eye Irrit. 2 H319 Provoca irritação ocular grave.

STOT SE 3 H335 Pode provocar irritação das vias respiratórias.

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(continuação da página 1)

- **2.2 Elementos do rótulo**
- **Rotulagem em conformidade com o Regulamento (CE) n.º 1272/2008**  
A substância classificou-se e está etiquetado em conformidade com o regulamento CLP.
- **Pictogramas de perigo**



GHS02 GHS07 GHS08

- **Palavra-sinal Perigo**
- **Componentes determinantes para os perigos constantes do rótulo:**  
óxido de propileno
- **Frases de perigo**
  - H224 Líquido e vapor extremamente inflamáveis.
  - H302+H312+H332 Nocivo por ingestão, contacto com a pele ou inalação.
  - H315 Provoca irritação cutânea.
  - H319 Provoca irritação ocular grave.
  - H340 Pode provocar anomalias genéticas.
  - H350 Pode provocar cancro.
  - H335 Pode provocar irritação das vias respiratórias.
- **Frases de prudência**
  - P210 Manter afastado do calor/faísca/chama aberta/superfícies quentes. - Não fumar.
  - P241 Utilizar equipamento eléctrico/de ventilação/de iluminação/à prova de explosão.
  - P303+P361+P353 SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): despir/retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água/tomar um duche.
  - P305+P351+P338 SE ENTRAR EM CONTACTO COM OS OLHOS: enxaguar cuidadosamente com água durante vários minutos. Se usar lentes de contacto, retire-as, se tal lhe for possível. Continuar a enxaguar.
  - P322 Medidas específicas (ver no presente rótulo).
  - P405 Armazenar em local fechado à chave.
  - P501 Eliminar o conteúdo/recipiente de acordo com a legislação local/regional/nacional/internacional.
- **2.3 Outros perigos**
- **Resultados da avaliação PBT e mPmB**
- **PBT:** Não aplicável.
- **mPmB:** Não aplicável.

### SECÇÃO 3: Composição/informação sobre os componentes

- **3.1 Caracterização química: Substâncias**
- **Designação CAS n.º**  
75-56-9 óxido de propileno
- **Número(s) de identificação**
- **Número CE:** 200-879-2
- **Número de índice:** 603-055-00-4

· **SVHC**

75-56-9 óxido de propileno

PT

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### SECÇÃO 4: Primeiros socorros

· **4.1 Descrição das medidas de primeiros socorros**

· **Indicações gerais:**

*Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.*

· **Em caso de inalação:**

*Remover a vítima para um local arejado. Se necessário administrar respiração artificial. Manter a vítima aquecida. Se os sintomas persistirem, consultar o médico.*

*Se a vítima estiver inconsciente, posicioná-la e transportá-la com estabilidade, deitada lateralmente.*

· **Em caso de contacto com a pele:** Lavar imediatamente com água e sabão e enxaguar abundantemente.

· **Em caso de contacto com os olhos:**

*Enxaguar os olhos durante alguns minutos sob água corrente, mantendo as pálpebras abertas. Em caso de persistência dos sintomas, consultar o médico.*

· **Em caso de ingestão:** Consultar imediatamente o médico

· **4.2 Sintomas e efeitos mais importantes, tanto agudos como retardados**

*Não existe mais nenhuma informação relevante disponível.*

· **4.3 Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários**

*Não existe mais nenhuma informação relevante disponível.*

### SECÇÃO 5: Medidas de combate a incêndios

· **5.1 Meios de extinção**

· **Meios adequados de extinção:**

*CO2, pó extintor ou jacto de água. Um incêndio de grandes dimensões deve ser combatido com jacto de água ou espuma resistente ao álcool.*

· **5.2 Perigos especiais decorrentes da substância ou mistura**

*Não existe mais nenhuma informação relevante disponível.*

· **5.3 Recomendações para o pessoal de combate a incêndios**

· **Equipamento especial de protecção:** Colocar máscara de respiração.

### SECÇÃO 6: Medidas a tomar em caso de fugas acidentais

· **6.1 Precauções individuais, equipamento de protecção e procedimentos de emergência**

*Usar equipamento de protecção. Manter as pessoas desprotegidas afastadas.*

· **6.2 Precauções a nível ambiental:**

*Diluir em bastante água.*

*Evitar que penetre na canalização / águas superficiais / águas subterrâneas.*

· **6.3 Métodos e materiais de confinamento e limpeza:**

*Recolher com produtos que absorvam líquidos (areia, seixos, absorventes universais, serradura ).*

*Eliminar residualmente as substâncias contaminadas como um resíduo segundo o Ponto 13.*

*Assegurar uma ventilação adequada.*

· **6.4 Remissão para outras secções**

*Para informações sobre uma manipulação segura, ver o capítulo 7.*

*Para informações referentes ao equipamento de protecção individual, ver o capítulo 8.*

*Para informações referentes à eliminação residual, ver o capítulo 13.*

### SECÇÃO 7: Manuseamento e armazenagem

· **7.1 Precauções para um manuseamento seguro**

*Assegurar uma boa ventilação / exaustão no local de trabalho.*

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Abrir e manusear o recipiente com cuidado

Evitar a formação de aerossóis.

· **Precauções para prevenir incêndios e explosões:**

Manter afastado de fontes de ignição - não fumar.

Proteger do calor.

Proteger contra descargas electrostáticas.

Manter uma máscara de respiração sempre preparada.

· **7.2 Condições de armazenagem segura, incluindo eventuais incompatibilidades**

· **Armazenagem:**

· **Requisitos para espaços ou contentores para armazenagem:** Armazenar num local fresco.

· **Avisos para armazenagem conjunta:** Não necessário.

· **Outros avisos sobre as condições de armazenagem:**

Manter o recipiente hermeticamente fechado.

Não manter o recipiente hermeticamente fechado para o gás.

Armazenar em recipientes bem fechados, em local fresco e seco.

Proteger do calor e da radiação directa do sol.

· **7.3 Utilizações finais específicas** Não existe mais nenhuma informação relevante disponível.

### SECÇÃO 8: Controlo da exposição/protecção individual

· **Indicações adicionais para concepção de instalações técnicas:** Não existem outras informações, ver ponto 7.

· **8.1 Parâmetros de controlo**

· **Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado:**

75-56-9 óxido de propileno

VLE	Valor para exposição longa: 2 ppm
	S; A3; Irritação ocular, do TRS

· **Indicações adicionais:** Foram utilizadas como base as listas válidas à data da elaboração.

· **8.2 Controlo da exposição**

· **Equipamento de protecção individual:**

· **Medidas gerais de protecção e higiene:**

Manter afastado de alimentos, bebidas e forragens.

Despir imediatamente a roupa contaminada e embebida.

Lavar as mãos antes das pausas e no fim do trabalho.

Guardar o vestuário de protecção separadamente.

Evitar o contacto com os olhos e com a pele.

· **Protecção respiratória:**

Utilizar uma máscara respiratória se a exposição for reduzida ou durante um curto espaço de tempo; se esta for mais prolongada ou mais intensa, utilizar uma máscara respiratória independente do ar ambiente.

· **Protecção das mãos:**



Luvas de protecção

O material das luvas tem de ser impermeável e resistente ao produto / à substância / preparação.

Uma vez que não foram realizados testes nesta área, não podemos recomendar um determinado tipo de material para as luvas que seja adequado para o produto / a preparação / a mistura de químicos.

Escolher o material das luvas tendo em consideração a durabilidade, a permeabilidade e a degradação.

· **Material das luvas**

A escolha das luvas mais adequadas não depende apenas do material, mas também de outras características qualitativas e varia de fabricante para fabricante.

( continuação na página 5 )

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- **Tempo de penetração no material das luvas**  
Deve informar-se sobre a validade exacta das suas luvas junto do fabricante e respeitá-la.
- **Protecção dos olhos:**



Óculos de protecção totalmente fechados

### SECÇÃO 9: Propriedades físicas e químicas

#### · 9.1 Informações sobre propriedades físicas e químicas de base

#### · Informações gerais

#### · Aspecto:

Forma:	Líquido
Cor:	Incolor
· Odor:	tipo éter
· Limiar olfactivo:	Não classificado.

· **valor pH:** Não classificado.

#### · Mudança do estado:

Ponto / intervalo de fusão:	-111,9 °C
Ponto / intervalo de ebulição:	34 °C

· **Ponto de inflamação:** -37 °C

· **Inflamabilidade (sólido, gás):** Não aplicável.

· **Temperatura de ignição:** 430 °C

· **Temperatura de decomposição:** Não classificado.

· **Auto-inflamabilidade:** Não classificado.

· **Perigos de explosão:** O produto não é explosivo. Contudo, é possível a formação de misturas explosivas ar/vapor.

#### · Limites de explosão:

Inferior:	1,9 Vol %
Superior:	15 Vol %

· **Pressão de vapor em 20 °C:** 590 hPa

· **Densidade em 20 °C:** 0,8313 g/cm<sup>3</sup>

· **Densidade relativa** Não classificado.

· **Densidade de vapor** Não classificado.

· **Velocidade de evaporação** Não classificado.

· **Solubilidade em / miscibilidade com água em 20 °C:** 405 g/l

· **Coefficiente de distribuição (n-octanol/água):** Não classificado.

#### · Viscosidade:

Dinâmico:	Não classificado.
Cinémático:	Não classificado.

#### · Percentagem de solvente:

Solventes orgânicos: 0,0 %

( continuação na página 6 )

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<b>VOC (UE)</b>	0,00 %
<b>· 9.2 Outras informações</b>	Não existe mais nenhuma informação relevante disponível.

### SECÇÃO 10: Estabilidade e reactividade

- **10.1 Reactividade**
- **10.2 Estabilidade química**
- **Decomposição térmica / condições a evitar:** Não existe decomposição se usado de acordo com as especificações.
- **10.3 Possibilidade de reacções perigosas** Não se conhecem reacções perigosas.
- **10.4 Condições a evitar** Não existe mais nenhuma informação relevante disponível.
- **10.5 Materiais incompatíveis:** Não existe mais nenhuma informação relevante disponível.
- **10.6 Produtos de decomposição perigosos:** Não se conhecem produtos de decomposição perigosos.

### SECÇÃO 11: Informação toxicológica

- **11.1 Informações sobre os efeitos toxicológicos**
- **Toxicidade aguda:**

· **Valores LD/LC50 relevantes para a classificação:**

#### 75-56-9 óxido de propileno

por via oral	LD50	380 mg/kg (rat)
por via dérmica	LD50	1245 mg/kg (rabbit)

- **Efeito de irritabilidade primário:**
- **sobre a pele:** Irritante para a pele e as mucosas.
- **sobre os olhos:** Efeito irritante.
- **sensibilização:** Não são conhecidos efeitos sensibilizantes.
- **Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)**  
Muta. 1B, Carc. 1B

### SECÇÃO 12: Informação ecológica

- **12.1 Toxicidade**
- **Toxicidade aquática:** Não existe mais nenhuma informação relevante disponível.
- **12.2 Persistência e degradabilidade** Não existe mais nenhuma informação relevante disponível.
- **12.3 Potencial de bioacumulação** Não existe mais nenhuma informação relevante disponível.
- **12.4 Mobilidade no solo** Não existe mais nenhuma informação relevante disponível.
- **Outras indicações ecológicas:**
- **Indicações gerais:**  
Classe de perigo para a água 3 (D) (auto-classificação): muito perigoso para a água  
Não deixar chegar às águas subterrâneas, aos cursos de água nem à canalização, nem em pequenas quantidades.  
Perigo de poluição da água potável mesmo se forem derramadas quantidades muito pequenas no subsolo.
- **12.5 Resultados da avaliação PBT e mPmB**
- **PBT:** Não aplicável.
- **mPmB:** Não aplicável.
- **12.6 Outros efeitos adversos** Não existe mais nenhuma informação relevante disponível.

PT

(continuação na página 7)

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### SECÇÃO 13: Considerações relativas à eliminação

- **13.1 Métodos de tratamento de resíduos**
- **Recomendação:** Não se pode eliminar juntamente com o lixo doméstico. Não permita que chegue à canalização.
- **Embalagens contaminadas:**
- **Recomendação:** Eliminação residual conforme o regulamento dos serviços públicos.
- **Meio de limpeza recomendado:** Água, eventualmente com adição de produtos de limpeza

### SECÇÃO 14: Informações relativas ao transporte

· <b>14.1 N° UN</b> · <b>ADR, IMDG, IATA</b>	UN1280
· <b>14.2 Designação oficial de transporte da ONU</b> · <b>ADR</b> · <b>IMDG, IATA</b>	1280 ÓXIDO DE PROPILENO PROPYLENE OXIDE
· <b>14.3 Classes de perigo para efeitos de transporte</b> · <b>ADR, IMDG, IATA</b>	
	
· <b>Classe</b> · <b>Rótulo</b>	3 Líquidos inflamáveis 3
· <b>14.4 Tipo de embalagem</b> · <b>ADR, IMDG, IATA</b>	I
· <b>14.5 Perigos para o ambiente:</b> · <b>Poluente das águas:</b>	Não
· <b>14.6 Precauções especiais para o utilizador</b> · <b>N° Kemler:</b> · <b>N° EMS:</b>	Atenção: Líquidos inflamáveis 339 F-E,S-D
· <b>14.7 Transporte a granel em conformidade com o anexo II da Convenção Marpol 73/78 e o Código IBC</b>	Não aplicável.
· <b>Transporte/outras informações:</b>	
· <b>ADR</b> · <b>Quantidades Limitadas (LQ)</b> · <b>Quantidades exceptuadas (EQ)</b>	0 Código: E3 Quantidade líquida máxima por embalagem interior: 30 ml Quantidade líquida máxima por embalagem exterior: 300 ml
· <b>Categoria de transporte</b> · <b>Código de restrição em túneis</b>	1 D/E
· <b>IMDG</b> · <b>Limited quantities (LQ)</b>	0

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· <b>Excepted quantities (EQ)</b>	Code: E3 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml
· <b>UN "Model Regulation":</b>	UN1280, ÓXIDO DE PROPILENO, 3, I

### SECÇÃO 15: Informação sobre regulamentação

- **15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente**
- **Disposições nacionais:**
- **Avisos para limitação da exposição no local de trabalho:**  
Os trabalhadores não devem ser expostos a substâncias perigosas. Em casos isolados os serviços públicos podem permitir excepções.
- **outros regulamentos, restrições e decretos que proibem**

· **Substâncias que suscitam elevada preocupação (SVHC) em conformidade com REACH, artigo 57**

75-56-9 | óxido de propileno

- **15.2 Avaliação da segurança química:** Não foi realizada nenhuma Avaliação de Segurança Química.

### SECÇÃO 16: Outras informações

As informações fornecidas baseiam-se no estado actual dos nossos conhecimentos, embora não representem uma garantia das propriedades do produto e não fundamentam uma relação contratual.

- **Abreviaturas e acrónimos:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 Flam. Liq. 1: Flammable liquids, Hazard Category 1  
 Acute Tox. 4: Acute toxicity, Hazard Category 4  
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
 Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
 Carc. 1B: Carcinogenicity, Hazard Category 1B  
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 19.05.2015

Revisión: 19.05.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

#### · 1.1 Identificador del producto

· **Nombre comercial:** PROPYLENE OXIDE

· **Número del artículo:** 20410

· **Número CAS:**

75-56-9

· **Número CE:**

200-879-2

· **Número de clasificación:**

603-055-00-4

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**

No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio

· **1.3 Datos del proveedor de la ficha de datos de seguridad**

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** Product safety department

· **1.4 Teléfono de emergencia:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

· **2.1 Clasificación de la sustancia o de la mezcla**

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 1 H224 Líquido y vapores extremadamente inflamables.



GHS08 peligro para la salud

Muta. 1B H340 Puede provocar defectos genéticos.

Carc. 1B H350 Puede provocar cáncer.



GHS07

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**Nombre comercial: PROPYLENE OXIDE**

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Acute Tox. 4 H302 Nocivo en caso de ingestión.  
 Acute Tox. 4 H312 Nocivo en contacto con la piel.  
 Acute Tox. 4 H332 Nocivo en caso de inhalación.  
 Skin Irrit. 2 H315 Provoca irritación cutánea.  
 Eye Irrit. 2 H319 Provoca irritación ocular grave.  
 STOT SE 3 H335 Puede irritar las vías respiratorias.

### · 2.2 Elementos de la etiqueta

#### · Etiquetado con arreglo al Reglamento (CE) n° 1272/2008

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

#### · Pictogramas de peligro



GHS02 GHS07 GHS08

#### · Palabra de advertencia Peligro

#### · Componentes peligrosos a indicar en el etiquetaje:

óxido de propileno

#### · Indicaciones de peligro

H224 Líquido y vapores extremadamente inflamables.  
 H302+H312+H332 Nocivo en caso de ingestión, contacto con la piel o inhalación.  
 H315 Provoca irritación cutánea.  
 H319 Provoca irritación ocular grave.  
 H340 Puede provocar defectos genéticos.  
 H350 Puede provocar cáncer.  
 H335 Puede irritar las vías respiratorias.

#### · Consejos de prudencia

P210 Mantener alejado de fuentes de calor, chispas, llama abierta o superficies calientes. - No fumar.  
 P241 Utilizar un material eléctrico, de ventilación o de iluminación/antideflagrante.  
 P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitarse inmediatamente las prendas contaminadas. Aclararse la piel con agua o ducharse.  
 P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.  
 P322 Se necesitan medidas específicas (ver en esta etiqueta).  
 P405 Guardar bajo llave.  
 P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

### · 2.3 Otros peligros

#### · Resultados de la valoración PBT y mPmB

· **PBT:** No aplicable.  
 · **mPmB:** No aplicable.

## SECCIÓN 3: Composición/información sobre los componentes

### · 3.1 Caracterización química: Sustancias

#### · Denominación N° CAS

75-56-9 óxido de propileno

#### · Número(s) de identificación

· Número CE: 200-879-2

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fecha de impresión 19.05.2015

Revisión: 19.05.2015

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( se continua en página 2 )

· **Número de clasificación:** 603-055-00-4· **SVHC**

75-56-9 óxido de propileno

### SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**· **Instrucciones generales:**

Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

· **En caso de inhalación del producto:**

Suministrar aire fresco; eventualmente hacer respiración artificial, calor. Si los trastornos persisten, consultar al médico.

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

· **En caso de contacto con la piel:** Lavar inmediatamente con agua y jabón y enjuagar bien.· **En caso de con los ojos:**

Limpia los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.

· **En caso de ingestión:** Consultar inmediatamente un médico.· **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.· **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

· **5.1 Medios de extinción**· **Sustancias extintoras apropiadas:**

CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.

· **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.· **5.3 Recomendaciones para el personal de lucha contra incendios**· **Equipo especial de protección:** Colocarse la protección respiratoria.

### SECCIÓN 6: Medidas en caso de vertido accidental

· **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

· **6.2 Precauciones relativas al medio ambiente:**

Diluir con mucha agua.

Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.

· **6.3 Métodos y material de contención y de limpieza:**

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

Desechar el material contaminado como vertido según ítem 13.

Asegurar suficiente ventilación.

· **6.4 Referencia a otras secciones**

Ver capítulo 7 para mayor información sobre una manipulación segura.

Ver capítulo 8 para mayor información sobre el equipo personal de protección.

Para mayor información sobre cómo desechar el producto, ver capítulo 13.

ES

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### SECCIÓN 7: Manipulación y almacenamiento

#### · 7.1 Precauciones para una manipulación segura

Asegurar suficiente ventilación /aspiración en el puesto de trabajo.

Abrir y manejar el recipiente con cuidado.

Evitar la formación de aerosoles.

#### · Prevención de incendios y explosiones:

Mantener alejadas las fuentes de encendido. No fumar.

Proteger del calor.

Tomar medidas contra las cargas electrostáticas.

Tener preparados los aparatos respiratorios.

#### · 7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades

##### · Almacenamiento:

· Exigencias con respecto al almacén y los recipientes: Almacenar en un lugar fresco.

· Normas en caso de un almacenamiento conjunto: No es necesario.

##### · Indicaciones adicionales sobre las condiciones de almacenamiento:

Mantener el recipiente cerrado herméticamente.

No cerrar el recipiente estanco al gas.

Almacenarlo en envases bien cerrados en un lugar fresco y seco.

Proteger del calor y de la luz directa del sol.

#### · 7.3 Usos específicos finales No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

#### · Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:

Sin datos adicionales, ver punto 7.

#### · 8.1 Parámetros de control

##### · Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:

75-56-9 óxido de propileno

LEP	Valor de larga duración: 4,8 mg/m <sup>3</sup> , 2 ppm
	r, véase Apartado 8

· Indicaciones adicionales: Como base se han utilizado las listas vigentes en el momento de la elaboración.

#### · 8.2 Controles de la exposición

##### · Equipo de protección individual:

##### · Medidas generales de protección e higiene:

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Guardar la ropa protectora por separado.

Evitar el contacto con los ojos y la piel.

##### · Protección respiratoria:

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

##### · Protección de manos:



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / substancia / preparado.

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Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:**



Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**

· **Datos generales**

· **Aspecto:**

Forma: Líquido

Color: Incoloro

· **Olor:** Etéreo

· **Umbral olfativo:** No determinado.

· **valor pH:** No determinado.

· **Cambio de estado**

Punto de fusión /campo de fusión: -111,9 °C

Punto de ebullición /campo de ebullición: 34 °C

· **Punto de inflamación:** -37 °C

· **Inflamabilidad (sólido, gaseiforme):** No aplicable.

· **Temperatura de ignición:** 430 °C

· **Temperatura de descomposición:** No determinado.

· **Autoinflamabilidad:** No determinado.

· **Peligro de explosión:** El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

· **Límites de explosión:**

Inferior: 1,9 Vol %

Superior: 15 Vol %

· **Presión de vapor a 20 °C:** 590 hPa

· **Densidad a 20 °C:** 0,8313 g/cm<sup>3</sup>

· **Densidad relativa** No determinado.

· **Densidad de vapor** No determinado.

· **Velocidad de evaporación** No determinado.

· **Solubilidad en / miscibilidad con agua a 20 °C:** 405 g/l

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- **Coefficiente de reparto (n-octanol/agua):** No determinado.
- **Viscosidad:**
  - Dinámica:** No determinado.
  - Cinemática:** No determinado.
- **Concentración del disolvente:**
  - Disolventes orgánicos:** 0,0 %
  - VOC (CE)** 0,00 %
- **9.2 Información adicional** No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad**
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda:**

· **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

**75-56-9 óxido de propileno**

Oral	LD50	380 mg/kg (rat)
Dermal	LD50	1245 mg/kg (rabbit)

- **Efecto estimulante primario:**
- **en la piel:** Irrita la piel y las mucosas.
- **en el ojo:** Produce irritaciones.
- **Sensibilización:** No se conoce ningún efecto sensibilizante.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**  
Muta. 1B, Carc. 1B

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 3 (autoclasiificación): muy peligroso para el agua  
No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados, ni siquiera en pequeñas cantidades.  
Una cantidad ínfima vertida en el subsuelo ya representa un peligro para el agua potable.

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- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

### SECCIÓN 14: Información relativa al transporte

- |  |   |
|--|---|
| · <b>14.1 Número UN</b>  | UN1280  |
| · <b>ADR, IMDG, IATA</b>   |   |
| · <b>14.2 Designación oficial de transporte de las Naciones Unidas</b>                               |   |
| · <b>ADR</b>   | 1280 ÓXIDO DE PROPILENO   |
| · <b>IMDG, IATA</b>  | PROPYLENE OXIDE   |
| · <b>14.3 Clase(s) de peligro para el transporte</b>   |   |
| · <b>ADR, IMDG, IATA</b>   |   |
|                   |   |
| · <b>Clase</b>   | 3 Líquidos inflamables  |
| · <b>Etiqueta</b>  | 3   |
| · <b>14.4 Grupo de embalaje</b>  |   |
| · <b>ADR, IMDG, IATA</b>   | 1   |
| · <b>14.5 Peligros para el medio ambiente:</b>   |   |
| · <b>Contaminante marino:</b>  | No  |
| · <b>14.6 Precauciones particulares para los usuarios</b>  | Atención: Líquidos inflamables  |
| · <b>Número Kemler:</b>  | 339   |
| · <b>Número EMS:</b>   | F-E,S-D   |
| · <b>14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC</b> | No aplicable.   |
| · <b>Transporte/datos adicionales:</b>   |   |
| · <b>ADR</b>   |   |
| · <b>Cantidades limitadas (LQ)</b>   | 0   |
| · <b>Cantidades exceptuadas (EQ)</b>   | Código: E3<br>Cantidad neta máxima por envase interior: 30 ml<br>Cantidad neta máxima por embalaje exterior: 300 ml |
| · <b>Categoría de transporte</b>   | 1   |
| · <b>Código de restricción del túnel</b>   | D/E   |

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- |   |  |
|---|--|
| · <b>IMDG</b>                                 |  |
| · <b>Limited quantities (LQ)</b>              | 0  |
| · <b>Excepted quantities (EQ)</b>             | Code: E3   |
|   | Maximum net quantity per inner packaging: 30 ml  |
|   | Maximum net quantity per outer packaging: 300 ml |
| · <b>"Reglamentación Modelo" de la UNECE:</b> | UN1280, ÓXIDO DE PROPILENO, 3, I                 |

### SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
  - **Disposiciones nacionales:**
  - **Indicaciones sobre las limitaciones de trabajo:**  
Los empleados no deben exponerse a esta sustancia peligrosa. En casos aislados las autoridades pueden hacer excepciones.
  - **Demás disposiciones, limitaciones y decretos prohibitivos**
  - **Sustancias altamente preocupantes (SVHC) según REACH, artículo 57**
- |         |                    |
|---------|--------------------|
| 75-56-9 | óxido de propileno |
|---------|--------------------|
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

- **Abreviaturas y acrónimos:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 Flam. Liq. 1: Flammable liquids, Hazard Category 1  
 Acute Tox. 4: Acute toxicity, Hazard Category 4  
 Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
 Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2  
 Muta. 1B: Germ cell mutagenicity, Hazard Category 1B  
 Carc. 1B: Carcinogenicity, Hazard Category 1B  
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3