1 Identification

· Product identifier
  · Trade name: PROPYLENE OXIDE, ACS REAGENT
  · Article number: 20401, 20411, 20412, 20414
  · 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: sgkck@aol.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 vapor.
  · GHS06 Skull and crossbones
    Acute Tox. 3 H311 Toxic in contact with skin.
    Acute Tox. 3 H331 Toxic if inhaled.
  · GHS08 Health hazard
    Muta. 1B H340 May cause genetic defects.
    Carc. 1B H350 May cause cancer.
  · GHS05 Corrosion
    Eye Dam. 1 H318 Causes serious eye damage.

(Contd. on page 2)
Trade name: PROPYLENE OXIDE, ACS REAGENT

Acute Tox. 4  H302  Harmful if swallowed.
Skin Irrit. 2  H315  Causes skin irritation.
STOT SE 3  H335  May cause respiratory irritation.

GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).

GHS pictograms
GHS02  GHS05  GHS06  GHS07  GHS08

Signal word Danger

Hazard-determining components of labeling:
propylene oxide

Hazard statements
Extremely flammable liquid and vapor.
Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.

Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Avoid release to the environment.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a poison center/doctor
Specific measures (see on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If skin irritation occurs: Get medical advice/attention.
Rinse mouth.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.
Trade name: PROPYLENE OXIDE, ACS REAGENT

Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 4
    - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - HEALTH: Health = 3
  - FIRE: Fire = 4
  - REACTIVITY: 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

4 First-aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  Remove breathing apparatus only after contaminated clothing have been completely removed.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation:
  Supply fresh air or oxygen; call for doctor.
  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. Then consult a doctor.
- After swallowing:
  Immediately call a doctor.
- Information for 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: CO2, 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.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
- 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene oxide</td>
<td>Long-term value: 240 mg/m³, 100 ppm</td>
<td>See Pocket Guide App. A</td>
<td>Long-term value: 4.8 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

- 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 skin.
  - 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 breakthrough 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**:
    - Form: Liquid
    - Color: Colorless
  - **Odor**: Characteristic
  - **Odour threshold**: Not determined.
  - **pH-value**: Not determined.

- **Change in condition**
  - **Melting point/Melting range**: -111.9 °C (-169 °F)
  - **Boiling point/Boiling range**: 34.3 °C (94 °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**:
  - **Lower**: 1.9 Vol %
  - **Upper**: 15 Vol %

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

- **Density at 20 °C (68 °F)**: 0.8313 g/cm³ (6.937 lbs/gal)

- **Relative density**: Not determined.

- **Vapour density**: Not determined.

- **Evaporation rate**: Not determined.

- **Solubility in / Miscibility with Water at 20 °C (68 °F)**: 405 g/l

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

- **Viscosity**:
  - **Dynamic**: Not determined.
  - **Kinematic**: Not determined.
  - **Organic solvents**: 0.0 %

- **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.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials** No further relevant information available.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9 propylene oxide</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Strong irritant with the danger of severe eye injury.
- 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.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- Behavior in environmental systems:
  - 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.
## 14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN1280</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
<td>Propylene oxide</td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>1280 Propylene oxide</td>
</tr>
<tr>
<td><strong>DOT</strong></td>
<td>PROPYLENE OXIDE</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>3 Flammable liquids</td>
</tr>
<tr>
<td><strong>Label</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td>PROPYLENE OXIDE</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>3 Flammable liquids</td>
</tr>
<tr>
<td><strong>Label</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Marine pollutant:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Warning: Flammable liquids</td>
</tr>
<tr>
<td><strong>Danger code (Kemler):</strong></td>
<td>339</td>
</tr>
<tr>
<td><strong>EMS Number:</strong></td>
<td>F-E,S-D</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>DOT</strong></td>
<td>On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L</td>
</tr>
<tr>
<td><strong>Quantity limitations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous substance:</strong></td>
<td>100 lbs, 45.4 kg</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>Code: E3</td>
</tr>
<tr>
<td><strong>Excepted quantities (EQ)</strong></td>
<td>Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 300 ml</td>
</tr>
</tbody>
</table>
Trade name: PROPYLENE OXIDE, ACS REAGENT

- 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.
  - 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.

- GHS label elements: The substance is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms
  - GHS02
  - GHS05
  - GHS06
  - GHS07
  - GHS08

- Signal word Danger
- Hazard-determining components of labeling:
  propylene oxide
Trade name: PROPYLENE OXIDE, ACS REAGENT

Hazard statements
Extremely flammable liquid and vapor.
Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.

Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Avoid release to the environment.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a poison center/doctor
Specific measures (see on this label).
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If skin irritation occurs: Get medical advice/attention.
Rinse mouth.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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 09/21/2015 / -

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
Trade name: PROPYLENE OXIDE, ACS REAGENT

- **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
- **Acute Tox. 3**: Acute toxicity, Hazard Category 3
- **Skin Irrit. 2**: Skin corrosion/irritation, Hazard Category 2
- **Eye Dam. 1**: Serious eye damage/eye irritation, Hazard Category 1
- **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
1 Identification of the substance/mixture and of the company/undertaking

· Product identifier
  · Trade name: PROPYLENE OXIDE, ACS REAGENT
  · Article number: 20401, 20411, 20412, 20414
  · 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: sgkcck@aol.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
  GHS02 flame

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

  GHS06 skull and crossbones

  Acute Tox. 3 H311 Toxic in contact with skin.
  Acute Tox. 3 H331 Toxic if inhaled.
Trade name: PROPYLENE OXIDE, ACS REAGENT

GHS08 health hazard

Mut. 1B  H340  May cause genetic defects.
Carc. 1B  H350  May cause cancer.

GHS05 corrosion

Eye Dam. 1  H318  Causes serious eye damage.

GHS07

Acute Tox. 4  H302  Harmful if swallowed.
Skin Irrit. 2  H315  Causes skin irritation.
STOT SE 3  H335  May cause respiratory irritation.

Label elements

GHS label elements
The substance is classified and labelled according to the Globally Harmonised System (GHS).

Hazard pictograms

Signal word Danger

Hazard-determining components of labelling:
propylene oxide

Hazard statements
Extremely flammable liquid and vapour.
Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.

Precautionary statements
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Avoid release to the environment.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
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:
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
    Remove breathing equipment only after contaminated clothing have been completely removed.
    In case of irregular breathing or respiratory arrest provide artificial respiration.
  • After inhalation:
    Supply fresh air or oxygen; call for doctor.
    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. Then consult a doctor.
  • After swallowing:
    Call for a doctor immediately.
  • Information for doctor:
    • Most important symptoms and effects, both acute and delayed
      No further relevant information available.
5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - CO2, 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

- Handling:
- 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.
    - Protect from heat and direct sunlight.
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/m³, 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.
    - Wash hands before breaks and at the end of work.
    - Avoid contact with the skin.
    - 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
### 9 Physical and chemical properties

- **General Information**
  - **Appearance:** Liquid
  - **Colour:** Colourless
  - **Odour:** Characteristic
  - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/Melting range:** -111.9 °C
  - **Boiling point/Boiling range:** 34.3 °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

- **Density at 20 °C:** 0.8313 g/cm³

- **Relative density:** Not determined.

- **Vapour density:** Not determined.

- **Evaporation rate:** 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 %

- **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.
11 Toxicological information

- Information on toxicological effects
- Acute toxicity

- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene oxide</td>
<td>380 mg/kg (rat)</td>
<td>1245 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
- Skin corrosion/irritation: Irritant to skin and mucous membranes.
- Serious eye damage/irritation: Strong irritant with the danger of severe eye injury.
- Respiratory or skin sensitisation: No sensitising effects known.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): Muta. 1B, Carc. 1B

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behaviour in environmental systems:
- 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.
### 14 Transport information

- **UN-Number**
  - ADG, IMDG, IATA: UN1280
- **UN proper shipping name**
  - ADG: 1280 PROPYLENE OXIDE
  - IMDG, IATA: PROPYLENE OXIDE
- **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
  - 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
  - UN "Model Regulation": UN1280, PROPYLENE OXIDE, 3, I

### 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
· **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**

GHS02  GHS05  GHS06  GHS07  GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
propylene oxide

· **Hazard statements**
Extremely flammable liquid and vapour.
Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.

· **Precautionary statements**
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Avoid release to the environment.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific measures (see on this label).
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If skin irritation occurs: Get medical advice/attention.
Rinse mouth.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not listed.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: PROPYLENE OXIDE, ACS REAGENT

(Contd. of page 9)

· 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.

· 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
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
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
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
1 Identification

· Product identifier

· Trade name: PROPYLENE OXIDE, ACS REAGENT

· Article number: 20401, 20411, 20412, 20414

· 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: sgkcck@aol.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 vapor.

  GHS06 Skull and crossbones

  Acute Tox. 3 H311 Toxic in contact with skin.
  Acute Tox. 3 H331 Toxic if inhaled.

  GHS08 Health hazard

  Muta. 1B H340 May cause genetic defects.
  Carc. 1B H350 May cause cancer.

  GHS05 Corrosion

  Eye Dam. 1 H318 Causes serious eye damage.

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 09/21/2015 Reviewed on 09/21/2015

Trade name: PROPYLENE OXIDE, ACS REAGENT

GHS07

Acute Tox. 4  H302  Harmful if swallowed.
Skin Irrit. 2  H315  Causes skin irritation.
STOT SE 3  H335  May cause respiratory irritation.

Aquatic Acute 3  H402  Harmful to aquatic life.
Aquatic Chronic 3  H412  Harmful to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC
Not applicable.

Toxic
Carc. Cat. 2, Muta. Cat. 2
May cause cancer. May cause heritable genetic damage. Toxic by inhalation and in contact with skin.

Harmful
Harmful if swallowed.

Irritant
Irritating to respiratory system and skin. Risk of serious damage to eyes.

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 if swallowed.
Also toxic by inhalation and in contact with skin.
Irritating to respiratory system and skin.
Risk of serious damage to eyes.

Safety phrases:
Avoid exposure - obtain special instructions before use.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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.
Trade name: PROPYLENE OXIDE, ACS REAGENT

- **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 = 3
  - Fire = 4
  - Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**
  - HEALTH
  - Health = 3
  - FIRE
  - Fire = 4
  - 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

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Immediately remove any clothing soiled by the product.
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - Remove breathing apparatus only after contaminated clothing have been completely removed.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
  - Supply fresh air or oxygen; call for doctor.
  - 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. Then consult a doctor.
41.0

- After swallowing: Immediately call a doctor.
- Information for 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:
    CO2, 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.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - 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.
Trade name: PROPYLENE OXIDE, ACS REAGENT

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

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9 propylene oxide</td>
</tr>
<tr>
<td>EL Long-term value: 2 ppm</td>
</tr>
<tr>
<td>IARC 2B: S</td>
</tr>
<tr>
<td>EV Long-term value: 2 ppm</td>
</tr>
</tbody>
</table>

- 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 skin.
    - 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 breakthrough 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

- **Appearance:**
  - **Form:** Liquid
  - **Color:** Colorless
- **Odor:** Characteristic
- **Odour threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
  - **Melting point/Melting range:** -111.9 °C
  - **Boiling point/Boiling range:** 34.3 °C
- **Flash point:** -37 °C
- **Flammability (solid, gaseous):** Not flammable.
- **Ignition temperature:** 430 °C
- **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:**
  - **Lower:** 1.9 Vol %
  - **Upper:** 15 Vol %
- **Vapor pressure at 20 °C:** 590 hPa
- **Density at 20 °C:** 0.8313 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** 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.
  - **Organic solvents:** 0.0 %
- **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.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
Trade name: PROPYLENE OXIDE, ACS REAGENT

- Hazardous decomposition products: No dangerous decomposition products known.

### 11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

<table>
<thead>
<tr>
<th>LD/LC50 values that are relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9 propylene oxide</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Strong irritant with the danger of severe eye injury.

- 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.

### 12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.

- Behavior in environmental systems:
  - 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.
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

- **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
Trade name: PROPYLENE OXIDE, ACS REAGENT

- 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.
    - 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.
Trade name: PROPYLENE OXIDE, ACS REAGENT

· 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 if swallowed.
  - Also toxic by inhalation and in contact with skin.
  - Irritating to respiratory system and skin.
  - Risk of serious damage to eyes.

· Safety phrases:
  - Avoid exposure - obtain special instructions before use.
  - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - 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 09/21/2015 / -

· 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)
  - NFFA: 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
  - Acute Tox. 3: Acute toxicity, Hazard Category 3
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - 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
  - Aquatic Acute 3: Hazardous to the aquatic environment - Acute Hazard, Category 3
  - Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
  - **Trade name:** PROPYLENE OXIDE, ACS REAGENT
  - **Article number:** 20401, 20411, 20412, 20414
  - **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**
  - **Application of the substance / the mixture** Laboratory chemicals
  - **No further relevant information available.**

- **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: sgkcck@aol.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.

  - GHS06 skull and crossbones
    - Acute Tox. 3 H311 Toxic in contact with skin.
    - Acute Tox. 3 H331 Toxic if inhaled.

  - GHS08 health hazard
    - Mutagenic 1B H340 May cause genetic defects.
    - Carcinogenic 1B H350 May cause cancer.

  - GHS05 corrosion
    - Eye Dam. 1 H318 Causes serious eye damage.

(Contd. on page 2)
Trade name: PROPYLENE OXIDE, ACS REAGENT

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.

Signal word Danger

Hazard-determining components of labelling:
propylene oxide

Hazard statements
H224 Extremely flammable liquid and vapour.
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H340 May cause genetic defects.
H350 May cause cancer.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
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

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information:
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
    Remove breathing equipment only after contaminated clothing have been completely removed.
    In case of irregular breathing or respiratory arrest provide artificial respiration.
  - After inhalation:
    Supply fresh air or oxygen; call for doctor.
    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. Then 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:
    CO2, 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.

(Contd. on page 4)
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.
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/m³, 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 skin.
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/substance/preparation. Due to missing tests no recommendation to the glove material can be given for the product/substance/preparation/chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation of the glove material 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 breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.

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: Characteristic
- Odour threshold: Not determined.
- pH-value: Not determined.

Change in condition

- Melting point/Melting range: -111.9 °C
- Boiling point/Boiling range: 34.3 °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

Density at 20 °C: 0.8313 g/cm³
### SECTION 9: Chemical and physical data

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<td>VOC (EC)</td>
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### 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:
    - Skin corrosion/irritation Irritant to skin and mucous membranes.
    - Serious eye damage/irritation Strong irritant with the danger of severe eye injury.
    - Respiratory or skin sensitisation No sensitising effects known.
  - CMR effects (carcinogenity, 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.
Trade name: PROPYLENE OXIDE, ACS REAGENT

- 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.

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 1
- 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
  · 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

SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  
  · Directive 2012/18/EU
  · Named dangerous substances - ANNEX I Substance is not listed.
  
  · National regulations:
    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
  Acute Tox. 3: Acute toxicity, Hazard Category 3
  Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

(Contd. on page 9)
Trade name: PROPYLENE OXIDE, ACS REAGENT

Carc. 1B: Carcinogenicity, Hazard Category 1B
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2015.09.21
在 2015.09.21 审核

1 化学品及企业标识

· 产品识别者
  - 化学品中文(英文)名称：PROPYLENE OXIDE, ACS REAGENT
  - 商品编号：20401, 20411, 20412, 20414
  - CAS 编号：75-56-9
  - 欧盟编号：200-879-2
  - 欧盟编号：603-055-00-4

· 相应纯物质或者混合物的相关下位用途及禁止用途：无相关详细资料。

· 原材料的应用/准备工作：实验室化学物

2 危险性概述

· 紧急情况概述：无色的，液体，极易燃液体和蒸气。 吞咽有害。皮肤接触或吸入可致中毒。 引起皮肤刺激。引起严重的眼睛损伤。 可引起遗传性缺陷。 可致癌。对水生生物有害并且有长期持续影响。

· GHS危险性类别
  - 火焰
    - 易燃液体 第1类：H224 极易燃液体和蒸气
  - 骷髅和交叉骨
    - 急性毒性(经皮肤) 第3类：H311 皮肤接触会中毒
    - 急性毒性(吸入) 第3类：H331 吸入会中毒
  - 健康危险
    - 生殖细胞致突变性 第1B类：H340 可引起遗传性缺陷
    - 致癌性 第1B类：H350 可致癌
  - 腐蚀
    - 严重眼睛损伤/眼睛刺激性 第1类：H318 引起严重的眼睛损伤
化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

化学品中文(英文)名称: PROPYLENE OXIDE, ACS REAGENT

急性毒性(径口) 第4类 H302 吞咽有害
皮肤腐蚀/刺激 第2类 H315 引起皮肤刺激
对水环境的危害(急性) 第3类 H402 对水生生物有害
对水环境的危害(慢性) 第3类 H412 对水生生物有害并且有长期持续影响

标签因素
- GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。
- 图示
  - GHS02
  - GHS05
  - GHS06
  - GHS08

- 名称 危险
- 标签上辨别危险的成份:
  1,2-环氧丙烷
- 危险字句
  极易燃液体和蒸气
  吞咽有害
  皮肤接触或吸入可致中毒
  引起皮肤刺激
  引起严重的眼睛损伤
  可引起遗传性缺陷
  可致癌
  对水生生物有害并且有长期持续影响
- 警戒字句
- 预防措施
  远离热源/火花/明火/热表面。-禁止吸烟。
- 事故响应
  如皮肤(或头发)沾染: 立即脱掉所有沾染的衣服，用水清洗皮肤/淋浴。
  如进入眼睛: 用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。
  立即呼叫解毒中心/医生
- 安全贮存
  存放处须加锁。
- 废弃处置
  按照本地/地区/国家/国际规例处理内含物/容器。
- 其他有害性
  - PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质) 评价结果
  - PBT(残留性、生物浓缩性、毒性物质) 适用的
  - vPvB(高残留性、高生物浓缩性物质): 不适用的

3 成分/组成信息
- 纯品
- CAS号 化学名、通用名
  75-56-9 1,2-环氧丙烷

(在 1 页继续)
4 急救措施

· 应急措施要领
  - 总说明：
    - 马上脱下染有该产品的衣服。
    - 中毒的症状可能会在几个小时以后才出现，因此在发生事故之后起码要有48小时的医疗观察。
    - 只在彻底地脱去了已被污染的衣服之后才能移走呼吸仪器。
    - 万一出现了不规则的呼吸或呼吸的阻碍，请为病人提供人工呼吸。
  - 吸入：
    - 供给新鲜空气或氧气。叫医生。
  - 万一病人不清醒时，请让病人侧躺以便移动。
  - 皮肤接触：马上用水和肥皂进行彻底的冲洗。
  - 眼睛接触：张开眼睛在流水下冲洗数分钟。然后咨询医生。
  - 食入：马上召唤医生。

· 给医生的资料：
  - 最重要的急慢性症状及其影响：无相关详细资料。
  - 需要及时的医疗处理及特别处理的症状：无相关详细资料。

5 消防措施

· 灭火方法
  - 灭火的方法和灭火剂：二氧化碳（CO2）、灭火粉末或洒水。使用洒水或抗酒精泡沫灭火剂扑灭较大的火种。
  - 特别危险性：无相关详细资料。
  - 特殊灭火方法：
    - 消防人员特殊的防护装备：口腔呼吸保护装置。

6 泄漏应急处理

· 保护措施
  - 带上保护仪器，让未受到保护的人们远离。

· 环境保护措施：
  - 用大量的水进行稀释。
  - 切勿让其进入下水道/水面或地下水。

· 吸收及净化方法和材料：
  - 吸收液体粘合原料（沙粒、硅藻土、酸性粘合剂、通用粘合剂、锯屑）。
  - 根据第13条条款弃置受污染物。
  - 确保有足够的通风装置。

· 参照其他部分
  - 有关安全处理的资料请参阅第7节。
  - 有关个人保护装备的资料请参阅第8节。
  - 有关弃置的资料请参阅第13节。

7 操作处置与储存

· 操作处置
  - 储存
    - 确保工作间有良好的通风/排气装置。
化学品安全技术说明书

化学品中文(英文)名称: PROPYLENE OXIDE, ACS REAGENT

小心打开及处理贮藏器.
防止气溶胶的形成.

有关火灾及防止爆炸的资料:
远离火源 - 切勿吸烟.
防热.
防静电.
提供呼吸保护装置.

混合危险性等安全储存条件

储存:
储存库和容器须要达到的要求:

储存密封的贮藏器内,并放在阴凉、干爽的位置.
免受接触热力和直接受阳光照射.

具体的最终用户 无相关详细资料.

8 接触控制和个体防护

- 工程控制方法: 没有进一步数据; 见第 7 项.

- 控制变量

在工作场需要监控的限值成分

75-56-9 1,2-环氧丙烷

OEL (RC) PC-TWA: 5 mg/m³
PEL (TW) PC-TWA: 48 mg/m³, 20 ppm

额外的资料: 制作期间有效的清单将作为基础来使用.

- 隔离控制

- 个人防护设备:

- 一般保护和卫生措施:
远高食品、饮料和饲料.
立即除去所有的不洁的和被污染的衣服.
在休息之前和工作完毕后请清洗双手.
分开储存保护性衣服.
避免和皮肤接触.
避免和眼睛及皮肤接触.

呼吸系统防护:
如果曾短暂接触或在低污染的情况下, 请使用呼吸过滤装置. 如果曾深入或较长时间接触, 请使用独立的呼吸保护装置.

手防护:

手的物料必须是不渗透性的, 且能抵抗该产品/物质/添加剂.
基于缺乏测试, 对于产品/制剂/化学混合物, 并不会提供手套材料的建议.
选择手套材料时, 请注意材料的渗透时间、渗透率和降解参数.

手的材料选择合适的手套不单取决于材料, 亦取决于质量特征, 以及来自哪一间生产厂家.

渗入手套材料的时间 请向劳保手套生产厂家获取准确的破裂时间并观察实际的破裂时间.
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<td>自燃温度</td>
<td>未决定.</td>
</tr>
<tr>
<td>爆炸的危险性</td>
<td>该产品并非爆炸性的然而有可能形成可爆炸性的空气/蒸汽混合物</td>
</tr>
<tr>
<td>爆炸极限</td>
<td></td>
</tr>
<tr>
<td>较低</td>
<td>1.9 Vol %</td>
</tr>
<tr>
<td>较高</td>
<td>15 Vol %</td>
</tr>
<tr>
<td>蒸气压在 20 °C</td>
<td>590 hPa</td>
</tr>
<tr>
<td>密度在 20 °C</td>
<td>0.8313 g/cm³</td>
</tr>
<tr>
<td>相对密度</td>
<td>未决定.</td>
</tr>
<tr>
<td>蒸气密度</td>
<td>未决定.</td>
</tr>
<tr>
<td>蒸发速率</td>
<td>未决定.</td>
</tr>
<tr>
<td>溶解性</td>
<td></td>
</tr>
<tr>
<td>水在 20 °C</td>
<td>405 g/l</td>
</tr>
<tr>
<td>n-辛醇/水分配系数</td>
<td>未决定.</td>
</tr>
<tr>
<td>黏性</td>
<td></td>
</tr>
<tr>
<td>动态</td>
<td>未决定.</td>
</tr>
<tr>
<td>运动学的</td>
<td>未决定.</td>
</tr>
<tr>
<td>有机溶剂</td>
<td>0.0 %</td>
</tr>
<tr>
<td>其他信息</td>
<td>无相关详细资料。</td>
</tr>
</tbody>
</table>

(在 6 页继续)
化学品安全技术说明书
根据 GB/T 16483-2008, GB/T 17519-2013

化学品中文(英文)名称: PROPYLENE OXIDE, ACS REAGENT

10 稳定性和反应性

- 反应性
- 稳定性
- 热分解/要避免的情况: 如果遵照规格使用则不会分解。
- 有害反应可能性: 未有已知的危险反应。
- 应避免的条件: 无相关详细资料。
- 不相容的物质: 无相关详细资料。
- 危险的分解产物: 未知有危险的分解产品。

11 毒理学信息

- 对毒性学影响的信息
- 急性毒性
  - 与分类相关的 LD/LC50 值:
    75-56-9 1,2-环氧丙烷
    口腔 LD50 380 mg/kg (rat)
    皮肤 LD50 1245 mg/kg (rabbit)
- 主要的刺激性影响:
  - 皮肤: 刺激皮肤和粘膜。
  - 在眼睛上面: 强烈的刺激性和造成严重伤害眼睛的危险。
- 致敏作用: 没有已知的敏化影响。
- 对以下组别可能产生影响的数据:
  - CMR 作用 (致癌、导致基因突变、对生殖系统有害)
  - 生殖细胞致突变性 第1B类, 致癌性 第1B类

12 生态学信息

- 生态毒性
  - 水生毒性: 无相关详细资料。
- 持久性和降解性: 无相关详细资料。
- 环境系统习性:
  - 潜在的生物累积性: 无相关详细资料。
  - 土壤内移动性: 无相关详细资料。
- 额外的生态学资料:
- 总括注解:
  水危害级别 3 (德国规例) (通过名单进行自我评估): 对水是极其危害的
  即使是小量。不要让该产品接触地下水、水道或污水系统。
  即使是极其小量的产品渗入地下也会对饮用水造成危险。
- PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果
  - PBT(残留性、生物浓缩性、毒性物质) 不适用的
  - vPvB(高残留性、高生物浓缩性物质): 不适用的
  - 其他副作用: 无相关详细资料。

13 废弃处置

- 废弃处置方法
  - 建议: 不能将该产品和家居垃圾一起丢弃。不要让该产品接触污水系统。
## 14 运输信息

- **联合国危险货物编号(UN号)**  
  - ADR, IMDG, IATA: UN1280

- **UN装载船衔**  
  - ADR: 1280 PROPYLENE OXIDE  
  - IMDG, IATA: PROPYLENE OXIDE

- **运输危险等级**  
  - ADR, IMDG, IATA

  - **级别**  
    - 3 可燃液体
  - **标签**  
    - 3

- **包装组别**  
  - ADR, IMDG, IATA: I

- **危害环境**  
  - **海运污染物**：不是

- **用户特别预防措施**  
  - **危险编码**：339
  - **EMS 号码**：F-E,S-D

- **MARPOL73/78(针对船舶引起的海洋污染预防公约)**  
  - 附件书2及根据IBC Code(国际装船货物编码)的大量运送：不适用

- **运输额外的资料**
  
  - **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 "标准规定"**
  
  - UN1280, PROPYLENE OXIDE, 3, I

(在6页继续)
**15 法规信息**

- 对应纯物质或者混合物的安全、保健及环境法规/法律
- 新化学物质环境管理办法

**有列出物质**

- GHS卷标元素 本化学物质根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。
- 危险象形图表

![GHS象形图](image)

- 名称: 危险
- 标签上辨别危险的成份:
  1,2-环氧丙烷
- 危险字句
  极易燃液体和蒸气
  吞咽有害
  皮肤接触或吸入可致中毒
  引起皮肤刺激
  引起严重的眼睛损伤
  可引起遗传性缺陷
  可致癌
  对水生生物有害并且有长期持续影响
- 警戒字句
- 预防措施
  远离热源/火花/明火/热表面。禁止吸烟。
- 事故响应
  如皮肤(或头发)沾染：立即脱掉所有沾染的衣服。用水清洗皮肤/淋浴。
  如进入眼睛：用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。
  立即呼叫解毒中心/医生
- 安全贮存
  存放处须加锁。
- 废弃处置
  按照本地/地区/国家/国际规例处理内含物/容器。
- 国家的规章:
  - 有关使用限制的资料: 禁止员工接触该危险物料。在某些情况可由当局作出例外决定。
  - 化学物质安全性评价: 尚未进行化学物质安全性评价

**16 其他信息**

该资料是基于我们目前的知识。然而，这并不构成对任何特定产品特性的担保并且不建立一个法律上有效的合同关系。

**缩写**

- 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)
## Propylene Oxide, ACS Reagent

**Chemical name:** Propylene oxide, ACS reagent

- **LC50:** Lethal concentration, 50 percent
- **LD50:** Lethal dose, 50 percent
- **Hazard Category:**
  - **Flammable liquids:** Hazard Category 1
  - **Acute toxicity:** Hazard Category 4
  - **Acute toxicity (Dermal):** Hazard Category 3
  - **Skin corrosion/irritation:** Hazard Category 2
  - **Serious eye damage/eye irritation:** Hazard Category 1
  - **Germ cell mutagenicity:** Hazard Category 1B
  - **Carcinogenicity:** Hazard Category 1B
  - **Hazardous to the aquatic environment - Acute:** Hazard Category 3
  - **Hazardous to the aquatic environment - Chronic:** Hazard Category 3
**ODDÍL 1: Identifikace látky/směsi a společnosti/podniku**

- **1.1 Identifikátor výrobku**
  - Obchodní označení: PROPYLENE OXIDE, ACS REAGENT
  - Číslo výrobku: 20401, 20411, 20412, 20414
  - Číslo CAS: 75-56-9
  - Číslo ES: 200-879-2
  - Indexové číslo: 603-055-00-4

- **1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití**
  - Další relevantní informace nejsou k dispozici.
  - Použití látky / přípravku Laboratorní chemikálie

- **1.3 Podrobné údaje o dodavateli bezpečnostního listu**
  - Identifikace výrobce/dovozce: Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcc@aol.com
    www.emsdiasum.com
  - Obor poskytující informace: Product safety department

- **1.4 Telefonní číslo pro naléhavé situace:**
  - ChemTrec 1-800-424-9300 Contract CCN7661
  - 1-703-527-3887

**ODDÍL 2: Identifikace nebezpečnosti**

- **2.1 Klasifikace látky nebo směsi**
  - Klasifikace v souladu s nařízením (ES) č. 1272/2008

  - GHS02 plamen
    Flam. Liq. 1 H224 Extrémně hořlavá kapalina a páry.

  - GHS06 lebka se zkřičenými hnáty
    Acute Tox. 3 H311 Toxický při styku s kůží.
    Acute Tox. 3 H331 Toxický při vdechování.

  - GHS08 nebezpečnost pro zdraví
    Muta. 1B H340 Může vyvolat genetické poškození.
    Carc. 1B H350 Může vyvolat rakovinu.

  - GHS05 korozivita
    Eye Dam. 1 H318 Způsobuje vážné poškození očí.
Bezpečnostní list
podle 1907/2006/ES, Článek 31

Datum vydání: 21.09.2015
Revize: 21.09.2015

Obchodní označení: PROPYLENE OXIDE, ACS REAGENT

GHS07

Acute Tox. 4  H302 Zdraví škodlivý při požití.
Skin Irrit. 2  H315 Dráždí kůži.
STOT SE 3  H335 Může způsobit podráždění dýchacích cest.

Aquatic Chronic 3 H412 Škodlivý pro vodní organismy, s dlouhodobými účinky.

2.2 Prvky označení

Označování v souladu s nařízením (ES) č. 1272/2008 Látka je klasifikována a označena podle nařízení CLP.

Výstražné symboly nebezpečnosti

GHS02 GHS05 GHS06 GHS08

Signální slovo Nebezpečí

Nebezpečné komponenty k etiketování:
propylenoxid

Standardní věty o nebezpečnosti
H224 Extrémně hořlavá kapalina a párty.
H302 Zdraví škodlivý při požití.
H311+H331 Toxický při styku s kůží a při vdechování.
H315 Dráždí kůži.
H318 Způsobuje vážné poškození očí.
H340 Může vyvolat genetické poškození.
H350 Může vyvolat rakovinu.
H335 Může způsobit podráždění dýchacích cest.
H412 Škodlivý pro vodní organismy, s dlouhodobými účinky.

Pokyny pro bezpečné zacházení
P210 Chraňte před teplom, horkými povrchy, jiskrami, otevřeným plamenem a jinými zdroji zapálení. Zákaz kouření.
P303+P361+P353 PŘI STYKU S KŮŽÍ (nebo s vlasy): Veškeré kontaminované části oděvu okamžitě svlékněte. Opláchněte kůži vodou/osprchujte.
P310 Okamžitě volejte TOXIKOLOGICKÉ INFORMAČNÍ STŘEDISKO/lékaře.
P501 Obsah/nádobu likvidujte v souladu s místními/regionálními/národními/mezinárodními předpisy.

2.3 Další nebezpečnost

Výsledky posouzení PBT a vPvB

PBT: Nedá se použít.
vPvB: Nedá se použít.

ODDÍL 3: Složení/informace o složkách

3.1 Chemická charakteristika: Látky

Číslo CAS: 75-56-9 propylenoxid
**Bezpečnostní list**  
**podle 1907/2006/ES, Článek 31**

Datum vydání: 21.09.2015  
Revize: 21.09.2015

**Obchodní označení:** **PROPYLENE OXIDE, ACS REAGENT**

- **Identifikační číslo(čísla)**
- Číslo ES: 200-879-2
- **Indexové číslo:** 603-055-00-4

- **SVHC**
  75-56-9 propylenoxid

**ODDÍL 4: Pokyny pro první pomoc**

- **4.1 Popis první pomoci**
- **Všeobecné pokyny:**
  Neprodleně odstranit část oděvů znečištěné produktem.
  Příznaky otravy se mohou projevit až po mnoha hodinách, proto je nutné lékařské dohled nejméně 48 hodin po nehodě.
  Ochrana dýchání odstranit teprve po odstranění znečištěných částí oděvů.
  Při nepravidelném dechu nebo zastavě dechu provést umělé dýchání.
- **Při nadýchání:**
  Přívod čerstvého vzduchu nebo kyslíku; vyhledat lékařskou pomoc.
  Při bezvědomí uložit a přepravit ve stabilní poloze na boku.
- **Při styku s kůží:**
  Otevřené oči po více minut oplachovat pod tekoucí vodou a poradit se s lékařem.
- **Při zasažení očí:**
  Ihned omýt vodou a mýdlem a dobře opláchnout.
- **4.2 Nejdůležitější akutní a opožděné symptomy a účinky** Další relevantní informace nejsou k dispozici.
- **4.3 Pokyn týkající se okamžité lékařské pomoci a zvláštního ošetření** Další relevantní informace nejsou k dispozici.

**ODDÍL 5: Opatření pro hašení požáru**

- **5.1 Hasiva**
- **Vhodná hasiva:**
  CO2, hasící prášek nebo rozestříkované vodní paprsky. Větší ohně zdolat rozestříkovanými vodními paprsky nebo pěnovou odolnou vůči alkoholu.
- **5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi** Další relevantní informace nejsou k dispozici.
- **5.3 Pokyny pro hasiče**
  Zvláštní ochranné prostředky pro hasiče: Použít ochranný dýchací přístroj.

**ODDÍL 6: Opatření v případě náhodného úniku**

- **6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy**
  Nosit ochrannou výstroj. Nechráněné osoby se nesmí přibližovat.
- **6.2 Opatření na ochranu životního prostředí:**
  Zředit velkým množstvím vody.
  Nenechat proniknout do kanalizace/povrchových vod/podzemních vod.
- **6.3 Metody a materiál pro omezení úniku a pro čištění:**
  Sebrat s materiály, vážící kapaliny (písek, štěrkový písek, pojídla kyselin, universální pojídla, piliny).
  Kontaminovaný materiál odstranit jako odpad podle bodu 13.
  Zajistit dostatečné větrání.
- **6.4 Odkaz na jiné oddíly**
  Informace o bezpečnému zacházení víz kapitola 7.
  Informace o osobní ochranné výstroji víz kapitola 8.
ODDÍL 7: Zacházení a skladování

7.1 Opatření pro bezpečné zacházení
Na pracovišti zabezpečit dobré větrání a odsávání.
Nádrž opatrně otevřít a zacházet s ní opatrně.
Zamezit vytváření aerosolů.

Upozornění k ochraně před ohněm a explozí:
Nepřiblížovat se ze zápalnými zdroji - nekouřit.
Chránit před horkem.
Zajistit proti elektrostatickému náboji.
Mít připravené ochranné dýchací přístroje.

7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí

7.3 Specifické konečné / specifická konečná použití
Další relevantní informace nejsou k dispozici.

ODDÍL 8: Omezování expozice / osobní ochranné prostředky

Technická opatření: Žádné další údaje, viz bod 7.

8.1 Kontrolní parametry

8.2 Omezování expozice

8.3 Specifické dýchací orgány:
Při krátkodobém nebo nízkém zatížení použít dýchací přístroj s filtrem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.

Ochrana rukou:

Ochranné rukavice
Materiál rukavic musí být nepropustný a odolný proti produktu / látku / směsi.
Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.
Výběr materiálu rukavic provede podle času průniku, permeability a degradace.

(pokračování na stráně 5)
**ODDÍL 9: Fyzikální a chemické vlastnosti**

9.1 Informace o základních fyzikálních a chemických vlastnostech

- **Vzhled:**
  - Skupenství: Tekutina
  - Barva: Bezbarvá
  - Zápach (vůně): Charakteristický
  - Prahová hodnota zápachu: Není určeno.

- **Hodnota pH:** Není určeno.

- **Změna stavu**
  - Teplota (rozmezí teplot) tání: -111,9 °C
  - Teplota (rozmezí teplot) varu: 34,3 °C

- **Bod vzplanutí:** -37 °C

- **Zápalnost (tuhé, plynné skupenství):** Nedá se použít.

- **Zápalná teplota:** 430 °C

- **Teplota rozkladu:** Není určeno.

- **Samozápalnost:** Není určeno.

- **Nebezpečí exploze:** I když produktu nehrozí nebezpečí exploze, je přesto možné nebezpečí exploze ve směsi par se vzduchem.

- **Meze výbušnosti:**
  - Dolní mez: 1,9 Vol %
  - Horní mez: 15 Vol %

- **Tenze par při 20 °C:** 590 hPa

- **Hustota při 20 °C:** 0,8313 g/cm³
  - Relativní hustota: Není určeno.
  - Hustota par: Není určeno.
  - Rychlost odpařování: Není určeno.

- **Rozpustnost ve / směsitelnost s vodou při 20 °C:** 405 g/l

- **Rozdělovací koeficient n-oktanol/voda:** Není určeno.

- **Viskozita:**
  - Dynamicky: Není určeno.
  - Kinematicky: Není určeno.
**ODDÍL 10: Stálost a reaktivita**

- **10.1 Reaktivita**
- **10.2 Chemická stabilita**
- **Termický rozklad / Podmínky, kterých je nutno se vyvarovat:**
  Nedochází k rozkladu při doporučeném způsobu použití.
- **10.3 Možnost nebezpečných reakcí**
  Žádné nebezpečné reakce nejsou známy.
- **10.4 Podmínky, kterým je třeba zabránit**
  Další relevantní informace nejsou k dispozici.
- **10.5 Neslučitelné materiály:**
  Další relevantní informace nejsou k dispozici.
- **10.6 Nebezpečné produkty rozkladu:**
  Nejsou známy žádné nebezpečné produkty při rozkladu.

**ODDÍL 11: Toxikologické informace**

- **11.1 Informace o toxikologických účincích**
- **Akutní toxicita**

  - **Zařazení relevantní hodnoty LD/LC 50:**
    75-56-9 propylenoxid
    - Orálně LD50 380 mg/kg (rat)
    - Pokožkou LD50 1245 mg/kg (rabbit)

  - **Primární dráždivé účinky:**
    - Žíravost/dráždivost pro kůži: Dráždí kůži a sliznice.
    - Vážné poškození očí / podráždění očí: Silně dráždivé účinky s nebezpečím vzniku vážných poškození zraku
    - Senzibilizace dýchacích cest / senzibilizace kůže: Neznámo žádné senzibilizující působení.
    - Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci):
      Muta. 1B, Carc. 1B

**ODDÍL 12: Ekologické informace**

- **12.1 Toxicita**
- **Aquatická toxicita:** Další relevantní informace nejsou k dispozici.
- **12.2 Perzenčnost a rozložitelnost**
  Další relevantní informace nejsou k dispozici.
- **12.3 Bioakumulační potenciál**
  Další relevantní informace nejsou k dispozici.
- **12.4 Mobilita v půdě**
  Další relevantní informace nejsou k dispozici.
- **Další ekologické údaje:**
  - **Všeobecná upozornění:**
    Třída ohrožení vody 3 (Samozařazení): silně ohrožuje vodu
    Nesmí vniknout do spodní vody, povodí nebo do kanalizace, ani v malých množstvích.
    Ohrožuje pitnou vodu už při proniknutí nepatrného množství do zeminy.
- **12.5 Výsledky posouzení PBT a vPvB**
  - **PBT:** Nedá se použít.
  - **vPvB:** Nedá se použít.

(pokračování na straně 7)
**Bezpečnostní list**  
_podle 1907/2006/ES, Článek 31_

Datum vydání: 21.09.2015  
Revize: 21.09.2015

**Obchodní označení:** PROPYLENE OXIDE, ACS REAGENT

- **12.6 Jiné nepříznivé účinky** Další relevantní informace nejsou k dispozici.

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**ODDÍL 13: Pokyny pro odstraňování**

- **13.1 Metody nakládání s odpady**
- **Doporučení:** Nesmí se odstraňovat společně s odpady z domácností. Nepřipustit únik do kanalizace.

- **Kontaminované obaly:**
- **Doporučení:** Odstranění podle příslušných předpisů.
- **Doporučený čistící prostředek:** Voda, případně s příslušnými čisticími prostředky.

---

**ODDÍL 14: Informace pro přepravu**

- **14.1 Číslo OSN**  
  ADR, IMDG, IATA  
  UN1280

- **14.2 Náležitý název OSN pro zásilku**  
  ADR  
  IMDG, IATA  
  1280 PROPYLENOXID  
  PROPYLENE OXIDE

- **14.3 Třída/řady nebezpečnosti pro přepravu**  
  ADR, IMDG, IATA

- **14.4 Obalová skupina**  
  ADR, IMDG, IATA  
  1

- **14.5 Nebezpečnost pro životní prostředí:**  
  Látka znečišťující moře:  
  Ne

- **14.6 Zvláštní bezpečnostní opatření pro uživatele**  
  Varování: Hořlavé kapaliny  
  Kemlerovo číslo: 339  
  EMS-skupina: F-E,S-D

- **14.7 Hromadná přeprava podle přílohy II**  
  MARPOL73/78 a předpisu IBC  
  Nedá se použít.

- **Přeprava/další údaje:**

<table>
<thead>
<tr>
<th><strong>ADR</strong></th>
</tr>
</thead>
</table>
  | Omezené množství (LQ) | 0  
  | Vyňatá množství (EQ) | Kód: E3  
  | | Nejvyšší čisté množství na vnitřní obal: 30 ml  
  | | Nejvyšší čisté množství na vnější obal: 300 ml  

  | **Číslo omezení pro tunely:** D/E

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(pokračování na straně 8)
Bezpečnostní list
podle 1907/2006/ES, Článek 31

Datum vydání: 21.09.2015
Revize: 21.09.2015

Obchodní označení: PROPYLENE OXIDE, ACS REAGENT

(pokračování strany 7)

- 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, PROPYLENOXID, 3, 1

ODDÍL 15: Informace o předpisech

- 15.1 Nařízení týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi
- Rady 2012/18/EU
- Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I Látka neobsažena.
- Národní předpisy:
  - Upozornění na omezení práce:
    Pracovníci nesmí přijít do styku s touto nebezpečnou látkou. V jednotlivých případech se mohou úřady povolit vyjimku.
- Jiná ustanovení, omezení a zákazy
- Látky vzbuzující mimořádné obavy (SVHC) podle REACH, čl. 57
  75-56-9 propylenoxid
- 15.2 Posouzení chemické bezpečnosti: Posouzení chemické bezpečnosti nebylo provedeno.

ODDÍL 16: Další informace

Údaje se opírají o dnešní stav našich vědomostí, nepředstavují však záruku vlastností produktu a nevznikají tak žádné smluvní právní vztahy.

- Zkratky a akronymy:
  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
  Acute Tox. 3: Acute toxicity, Hazard Category 3
  Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  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
  Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
PUNKT 1: Identifikation af stoffet/blandingen og af selskabet/virksomheden

1.1 Produktidentifikator

- **Handelsnavn:** PROPYLENE OXIDE, ACS REAGENT
- **Artikelenummer:** 20401, 20411, 20412, 20414
- **CAS-nummer:** 75-56-9
- **EC-nummer:** 200-879-2
- **Indeksnummer:** 603-055-00-4

1.2 Relevante identificerede anvendelser for stoffet eller blandingen samt anvendelser, der frarådes

Der står ingen yderligere, relevante informationer til rådighed.

1.3 Nærmere oplysninger om leverandøren af sikkervhedsdatabladet

- **Producent/leverandør**
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com
- **For yderligere information:** Product safety department
- **1.4 Nødtelefon:**
  ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

PUNKT 2: Fareidentifikation

2.1 Klassificering af stoffet eller blandingen

- **Klassificering i henhold til forordning (EF) nr. 1272/2008**

  - **GHS02 flamme**
    Flam. Lig. 1 H224 Yderst brandfarlig væske og damp.
  - **GHS06 dødningehoved og korslagte knogler**
    Acute Tox. 3 H311 Giftig ved hudkontakt.
    Acute Tox. 3 H331 Giftig ved indånding.
  - **GHS08 sundhedsfarer**
    Muta. 1B H340 Kan forårsage genetiske defekter.
    Carc. 1B H350 Kan fremkalde kreft.
  - **GHS05 ætsning**
    Eye Dam. 1 H318 Forårser alvorlig øjenskade.

(Fortættes på side 2)
Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

GHS07

Acute Tox. 4     H302  Farlig ved indtagelse.
Skin Irrit. 2    H315  Forårsager hudirritation.
STOT SE 3        H335  Kan forårsage irritation af luftvejene.

Aquatic Chronic 3 H412  Skadelig for vandlevende organismer, med langvarige virkninger.

2.2 Mærkningselementer

Mærkning i henhold til forordning (EF) nr. 1272/2008
Denne substans er klassificeret og mærket iht. CLP-forordningen.

Farepiktogrammer

GHS02  GHS05  GHS06  GHS08

Signalord  Fare

Farebestemmende komponent(er) til etikettering:
propylenoxid

Faresætninger

H224  Yderst brandfarlig væske og damp.
H302  Farlig ved indtagelse.
H311+H331  Livsfarlig ved hudkontakt eller indånding.
H315  Forårsager hudirritation.
H318  Forårsager alvorlig øjenskade.
H340  Kan forårsage genetiske defekter.
H350  Kan fremkalde knæft.
H335  Kan forårsage irritation af luftvejene.
H412  Skadelig for vandlevende organismer, med langvarige virkninger.

Sikkerhedssætninger

P210  Holdes væk fra varme, varme overflader, gnister, åben ild og andre antændelseskilder. Rygning forbudt.
P310  Ring omgående til en GIFTINFORMATION/læge.
P405  Opbevares under lås.
P501  Bortskaffelse af indholdet/beholderen i henhold til de lokale/regionale/nationale/ internationale forskrifter.

2.3 Andre farer

Resultater af PBT- og vPvB-vurdering

PBT: Ikke relevant.
vPvB: Ikke relevant.
Sikkerhedsdatablad
ifølge 1907/2006/EF, Artikel 31

Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

PUNKT 3: Sammensætning af/oplysning om indholdsstoffer

- 3.1 Kemisk betegnelse: Stoffer
- CAS-nr. betegnelse
  75-56-9 propylenoxid
- Identifikationsnummer (-numre)
  - EC-nummer: 200-879-2
  - Indeksnummer: 603-055-00-4
- SVHC
  75-56-9 propylenoxid

PUNKT 4: Førstehjælpsforanstaltninger

- 4.1 Beskrivelse af førstehjælpsforanstaltninger
- Generelle anvisninger:
  Tøj, der er forurenet med produktet, skal tages af med det samme.
  Forgiftningssymptomer kan optræde med mange timers forsinkelse, derfor skal lægeovervågningen vare mindst 48 timer efter et uheld.
  Åndedrætsværnet må først tages af, efter at det forurene tøj er blevet fjernet.
  I tilfælde af uregelmæssigt åndedræt eller hvis åndedrættet ophører, skal der gives kunstigt åndedræt.
- Efter indånding:
  Tilførsel af frisk luft eller ilt. Søg lægehjælp.
  I tilfælde af bevidstløshed skal den tilskadekomne lægges ned og transporteres i stabilt sideleje.
- Efter hudkontakt:
  Skal omgående vaskes af med vand og sæbe, skyl godt efter.
- Efter øjenkontakt:
  Skyl øjnene med åbent øjenlåg i flere minutter undre rindende vand og søg læge.
- Efter indtagelse:
  Søg læge.

- 4.2 Vigtigste symptomer og virkninger, både akutte og forsinkede
  Der står ingen yderligere, relevante informationer til rådighed.

- 4.3 Angivelse af om øjeblikkelig lægehjælp og særlig behandling er nødvendig
  Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 5: Brandbekæmpelse

- 5.1 Slukningsmidler
- Egnede slukningsmidler:
  CO₂, slukningspulver eller vandspraystråle. Større brande bekæmpes med vandspraystråle eller alkoholbestandigt skum.
- 5.2 Særlige farer i forbindelse med stoffet eller blandingens
  Der står ingen yderligere, relevante informationer til rådighed.
- 5.3 Anvisninger for brandmandskab
- Særlige værnemidler: Bær åndedrætsværn.

PUNKT 6: Forholdsregler over for udslip ved uheld

- 6.1 Personlige sikkerhedsforanstaltninger, personlige værnemidler og nødprocedurer
  Bær beskyttelsesudstyr. Hold ubeskyttede personer borte.
- 6.2 Miljøbeskyttelsesforanstaltninger:
  Fortynd med rigeligt vand.
  Må ikke udledes i kloaksystem/overfladevand/grundvand.
**PUNKT 7: Håndtering og opbevaring**

- **7.1 Forholdsregler for sikker håndtering**
  Sørg for god udluftning/udsugning på arbejdspladsen.
  Beholdere skal åbnes og håndteres med forsigtighed.
  Undgå aerosoldannelse.
- **Anvisninger vedrørende brand- og eksplosionsbeskyttelse:**
  Hold antændelige kilder borte – ingen rygning.
  Beskyttes mod varme.
  Traf forholdsregler mod elektrostatiske opladninger.
  Hold åndedrætsværn i beredskab.
- **7.2 Betingelser for sikker opbevaring, herunder eventuel uforenelighed**

**Opbevaring:**
- **Krav til opbevaringsrum og beholdere:** Opbevares på et køligt sted.
- **Henvisninger vedrørende opbevaring med andre stoffer:** Ikke påkrævet.
- **Yderligere oplysninger vedrørende opbevaringsbetingelserne:**
  Hold beholderen tørlagt lukket.
  Lak ikke beholderen gastet.
  Opbevares køligt og tørt i tætsluttende beholdere.
  Beskyttes mod varme og direkte sollys.
- **7.3 Særlige anvendelser** Der står ingen yderligere, relevante informationer til rådighed.

**PUNKT 8: Eksponeringskontrol/personlige værnemidler**

- **Yderligere anvisninger vedrørende udformning af tekniske anlæg:** Ingen yderligere oplysninger, se punkt 7.
- **8.1 Kontrolparametre**
- **Indholdsstoffer med arbejdspladsrelaterede grænseværdier, der skal overvåges:**

<table>
<thead>
<tr>
<th>75-56-9 propylenoxid</th>
</tr>
</thead>
<tbody>
<tr>
<td>GV</td>
</tr>
<tr>
<td>HK</td>
</tr>
</tbody>
</table>

- **Yderligere anvisninger:** Baseret på de lister, der var gældende på tidspunktet for udarbejdelsen.
- **8.2 Eksponeringskontrol**
  - **Personlige værnemidler:**
  - **Generelle forholdsregler vedrørende beskyttelse og hygiejne:**
    Skal holdes borte fra føde- og drikkevarer og foderstoffer.
    Forurennet, gennemvædet tøj skal det tages af med det samme.
    Vask hænder inden der holdes pause og ved arbejdsofphør.
    Adskilt opbevaring af beskyttelsesklædning.
    Undgå kontakt med huden.
    Undgå kontakt med øjne og hud.
Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

- **Åndedrætsværn:**
  Ved kortvarig eller ringe belastning skal der benyttes åndedrætsværn med filter, ved intensiv eller længere eksponering skal der benyttes luftforsynet åndedrætsværn.
- **Håndbeskyttelse:**

  **Beskyttelseshandsker**

  Handskematerialet skal være uigennemtrængeligt og kunne tåle produktet/stoffet/præparatet. På grund af manglende tests kan der ikke anbefales noget handskemateriale til produktet/præparatet/kemikalieblandingen.

  Ved valg af handskematerialet skal der tages højde for gennemtrængningstider, permeabilitetstal og nedbrydning.

- **Handsikematiale:**

  Valg af en egnet handske afhænger ikke blot af materialet, men også af yderligere kvalitetskriterier og er forskelligt fra den ene fabrikant til den anden.

- **Handsikematialets gennemtrængningstid**

  Hos handskefabrikanten skal man forespørge om den nøjagtige gennemtrængningstid og overholde denne.

- **Øjenbeskyttelse:**

  **Tætsluttende beskyttelsesbriller**

---

**PUNKT 9: Fysisk-kemiske egenskaber**

- **9.1 Oplysninger om grundlæggende fysiske og kemiske egenskaber**
  - **Generelle oplysninger**

    **Form:**
    Væske

    **Farve:**
    Farveløs

    **Lugt:**
    Karakteristisk

    **Lugttærskel:**
    Ikke bestemt.

    **pH-værdi:**
    Ikke bestemt.

  - **Tilstandsændring**

    **Smeltepunkt/smelteområde**
    -111,9 °C

    **Kogepunkt/kogeområde**
    34,3 °C

  - **Flammepunkt:**
    -37 °C

  - **Antændelighed (fast, i luftform):**
    Ikke relevant.

  - **Antændelsespunkt:**
    430 °C

  - **Nedbrydningstemperatur:**
    Ikke bestemt.

  - **Selvantændelighed:**
    Ikke bestemt.

  - **Eksplosionsfare:**

    Produktet er ikke eksplosivt, der kan dog dannes eksplosive damp-/luftblandinger.

  - **Eksplosionsgrænser**

    **Nedre:**
    1,9 Vol %

    **Øvre:**
    15 Vol %

(Fortsættes på side 6)
Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

- Damptryk ved 20 °C: 590 hPa
- Densitet ved 20 °C: 0,8313 g/cm³
- Relativ densitet: Ikke bestemt.
- Dampstøthed: Ikke bestemt.
- Fordampningshastighed: Ikke bestemt.

- Opløselighed i/væsler ved 20 °C: 405 g/l
- Fordelingskoefficient (n-octanol/væske): Ikke bestemt.
- Viskositet: 
  - Dynamisk: Ikke bestemt.
  - Kinematisk: Ikke bestemt.
- Opløsningsmiddelindhold: 
  - Organiske opløsningsmidler: 0,0 %
  - VOC (EU): 0,00 %

- 9.2 Andre oplysninger: Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 10: Stabilitet og reaktivitet

- 10.1 Reaktivitet
- 10.2 Kemisk stabilitet
- Termisk nedbrydning/forhold, der bør undgås: Ingen nedbrydning ved formålsbestemt brug.
- 10.3 Risiko for farlige reaktioner: Der er ikke kendskab til nogen farlige reaktioner.
- 10.4 Forhold, der sker undgås: Der står ingen yderligere, relevante informationer til rådighed.
- 10.5 Materialer, der skal undgås: Der står ingen yderligere, relevante informationer til rådighed.
- 10.6 Farlige nedbrydningsprodukter: Der er ikke kendskab til nogen farlige nedbrydningsprodukter.

PUNKT 11: Toksikologiske oplysninger

- 11.1 Oplysninger om toksikologiske virkninger
- Akut toksicitet
- Klassificeringsrelevante LD/LC50-værdier:
  
<table>
<thead>
<tr>
<th>75-56-9 propylenoxid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- Primær irritationsvirkning: 
  - Hudetsning/irritation: Virker irriterende på hud og slimhinder.
  - Alvorlig øjenskade/øjenirritation: Virker stærkt lokalirriterende med risiko for alvorlige øjenskader.
  - Respiratorisk sensibilisering eller hudensensibilisering: Der er ikke kendskab til nogen sensibiliserende virkning.
  - CMR-virksomheder (kræfteremakende egenskaber, mutagenicitet og reproductionstoksicitet): Muta. 1B, Carc. 1B

PUNKT 12: Miljøoplysninger

- 12.1 Toksicitet
- Toksicitet i vand: Der står ingen yderligere, relevante informationer til rådighed.
- 12.2 Persistens og nedbrydelighed: Der står ingen yderligere, relevante informationer til rådighed.
Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

- 12.3 Bioakkumuleringspotentiale Der står ingen yderligere, relevante informationer til rådighed.
- 12.4 Mobilitet i jord Der står ingen yderligere, relevante informationer til rådighed.
- Yderligere økologiske oplysninger:
  - Generelle anvisninger:
    Fareklasse for vand 3 (Selvklassificering): stærkt vandforurenende
    Må ikke uledes i grundvandet, vandløb eller kloaksystemet, heller ikke i små mængder.
    Risiko for forurening af drikkevandet allerede ved udslib af ganske små mængder i undergrunden.
- 12.5 Resultater af PBT- og vPvB-vurdering
  - PBT: Ikke relevant.
  - vPvB: Ikke relevant.
- 12.6 Andre negative virkninger Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 13: Forhold vedrørende bortskaffelse

- 13.1 Metoder til affaldsbehandling
  - Urensedes emballager:
    - Anbefaling: Bortskaffes i overensstemmelse med myndighedernes forskrifter.
    - Anbefalet rengøringsmiddel: Vand, eventuelt tilsat rengøringsmidler.

PUNKT 14: Transportoplysninger

- 14.1 UN-nummer
  ADR, IMDG, IATA UN1280

- 14.2 UN-forsendelsesbetegnelse (UN proper shipping name)
  ADR 1280 PROPYLENOXID
  IMDG, IATA PROPYLENE OXIDE

- 14.3 Transportfareklasse(r)
  ADR, IMDG, IATA
  - klasse 3 Brandfarlige væsker
  - Faremærkat 3

- 14.4 Emballagegruppe
  ADR, IMDG, IATA 1

- 14.5 Miljøfarer:
  Marine pollutant: Nej

- 14.6 Særlige forsigtighedsregler for brugeren
  Advarsel: Brandfarlige væsker
  Kemler-tal: 339
  EMS-nummer: F-E,S-D

- 14.7 Bulktransport i henhold til bilag II i MARPOL 73/78 og IBC-koden
  Ikke relevant.
### PUNKT 15: Oplysninger om regulering

- **15.1 Særlige bestemmelser/særlig lovgivning for stoffet eller blandingen med hensyn til sikkerhed, sundhed og miljø**
  - Direktiv 2012/18/EU
  - Navngivne farlige stoffer - BILAG I Stoffet er ikke optaget i listen.
- **Nationale forskrifter:**
- **Oplysninger vedrørende beskæftigelsesbeskrænksning:**
  Arbejdstagere må ikke udsættes for dette farstoff. I enkelte tilfælde kan myndighedene bevillige undtagelser.
- **Øvrige forskrifter, restriktioner og forbudsforordninger**
- **Særligt problematiske stoffer (SVHC) ifølge REACH, artikel 57**
- **MAL-Code:** 5-6

### PUNKT 16: Andre oplysninger

Alle ovenstående angivelser er baseret på vores aktuelle viden, udgør dog ikke nogen tilsikring af produktgengenskaber og stifter heller ikke noget kontraktigt retsforhold.

- **Forkortelser og akronymer:**
  - 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)
  - Måleteknisk Arbejdshygienisk Luftbehov
  - 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
Handelsnavn: PROPYLENE OXIDE, ACS REAGENT

Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
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
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
Bladzijde: 1/9

Veiligheidsinformatieblad
volgens 1907/2006/EG, Artikel 31

datum van de druk: 21.09.2015
Herziening van: 21.09.2015

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

· 1.1 Productidentificatie
· Handelsnaam: PROPYLENE OXIDE, ACS REAGENT
· Artikelnummer: 20401, 20411, 20412, 20414
· 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.

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: sgkck@aol.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 ontlambare vloeistof en damp.

  GHS06 doodshoofd met gekruiste beenderen

  Acute Tox. 3  H311 Giftig bij contact met de huid.
  Acute Tox. 3  H331 Giftig bij inademing.

  GHS08 gezondheidsgevaar

(Vervolg op blz. 2)
Handelsnaam: PROPYLENE OXIDE, ACS REAGENT

Muta. 1B H340 Kan genetische schade veroorzaken.
Carc. 1B H350 Kan kanker veroorzaken.

GHS05 corrosie

Eye Dam. 1 H318 Veroorzaakt ernstig oogletsel.

GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.
Skin Irrit. 2 H315 Veroorzaakt huidirritatie.
STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

Aquatic Chronic 3 H412 Schadelijk voor in het water levende organismen, met langdurige gevolgen.

2.2 Etiketteringselementen
- Etikettering overeenkomstig Verordening (EG) nr. 1272/2008
  De stof product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- Gevarenpictogrammen

GHS02 GHS05 GHS06 GHS08

- Signaalwoord Gevaar
- Gevaaraanduidende componenten voor de etikettering:
  propyleenoxide
- Gevarenaanduidingen
  H224 Zeer licht ontvlambare vloeistof en damp.
  H302 Schadelijk bij inslikken.
  H311+H331 Giftig bij contact met de huid en bij inademing.
  H315 Veroorzaakt huidirritatie.
  H318 Veroorzaakt ernstig oogletsel.
  H340 Kan genetische schade veroorzaken.
  H350 Kan kanker veroorzaken.
  H335 Kan irritatie van de luchtwegen veroorzaken.
  H412 Schadelijk voor in het water levende organisme, met langdurige gevolgen.
- Veiligheidsaanbevelingen
  P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.
  P305+P351+P338 BIJ CONTACT MET DE OGEN: voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.
  P310 Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.
  P405 Achter slot bewaren.
  P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

(Vervolg op blz. 3)
Handelsnaam: PROPYLENE OXIDE, ACS REAGENT

- 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
  - Catalogusnummer: 603-055-00-4

- SVHC
  75-56-9 propyleenoxide

RUBRIEK 4: Eerstehulpmaatregelen

- 4.1 Beschrijving van de eerstehulpmaatregelen
  - Algemene informatie:
    Verontreinigde kleding onmiddellijk uittrekken.
    Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle
gedurende minstens 48 uur na een ongeval noodzakelijk.
    Ademhalingstoestel pas afnemen nadat de verontreinigde kleding verwijderd is.
    Bij onregelmatige ademhaling of ademstilstand kunstmatige ademhaling toepassen.
  - Na het inademen:
    Verse lucht of zuurstof toedienen; deskundige medische hulp inroepen.
    Bij bewusteloosheid ligging en vervoer in stabiele zijligging.
  - Na huidcontact: Ondadelijk met water en zeep afwassen en goed naspoelen.
  - Na oogcontact: Ogen met open ooglid een aantal minuten onder stromend water afspoelen en dokter raadplegen.
  - Na inslikken:
    Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

- 5.1 Blusmiddelen
  - Geschikte blusmiddelen:
    CO2, 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
    Ademhalingstoestel aantrekken.

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

- 6.1 Persoonlijke voorzorgsmaatregelen, beschermd uitrusting en noodprocedures
  Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
Handelsnaam: PROPYLENE OXIDE, ACS REAGENT

- **6.2 Milieuvoorzorgsmaatregelen:**
  Met veel water verdunnen.
  Niet in de riolering/oppervlaktewater/brandweerlaten terechtkomen.

- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**
  Met vloeistofbindend materiaal (zand, bergmeel, zuurbinders, universele binders, 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.

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**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:**
  Onstekingsbronnen op afstand houden - niet roken.
  Beschermen tegen hitte.
  Beschermende kleding afzonderlijk bewaren.
  Verwijderd houden van eet- en drinkwaren.

- **8.2 Controleparameters**
  Bestanddelen met grenswaarden die m.b.t. de werknemer in acht genomen moeten worden:
  - 75-56-9 propyleenoxide
  - WGW Lange termijn waarde: 6 mg/m³, 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.
    Verontreinigd kleding onmiddellijk uittrekken.
    Vóór de pauze en aan het einde van werktijd handen wassen.
    Beschermende kleding afzonderlijk bewaren.
    Aanraking met de huid vermijden.

(Vervolg op blz. 5)
**Veiligheidsinformatieblad**

**volgens 1907/2006/EG, Artikel 31**

**Handelsnaam:** PROPYLENE OXIDE, ACS REAGENT

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**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 ademhalingstoestel gebruiken.

- **Handbescherming:**
  Veiligheidshandschoenen


- **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

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**RUBRIEK 9: Fysische en chemische eigenschappen**

- **9.1 Informatie over fysische en chemische basiseigenschappen**
- **Algemene gegevens**
  - **Voorkomen:**
    - **Vorm:** Vloeistof
    - **Kleur:** Kleurloos
  - **Reuk:** Karakteristiek
  - **Geurdrempelwaarde:** Niet bepaald.
  - **pH-waarde:** Niet bepaald.

- **Toestandsverandering**
  - **Smeltpunt/smelterijkbereik:** -111,9 °C
  - **Kookpunt/kookpuntherijk:** 34,3 °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:**
  - **Onderste:** 1,9 Vol %

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(Vervolg op blz. 6)
Handelsnaam: PROPYLENE OXIDE, ACS REAGENT

<table>
<thead>
<tr>
<th>Bovenste:</th>
<th>15 Vol %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dampspanning bij 20 °C:</td>
<td>590 hPa</td>
</tr>
<tr>
<td>Dichtheid bij 20 °C:</td>
<td>0,8313 g/cm³</td>
</tr>
<tr>
<td>Relatieve dichtheid</td>
<td>Niet bepaald.</td>
</tr>
<tr>
<td>Dampdichtheid</td>
<td>Niet bepaald.</td>
</tr>
<tr>
<td>Verdampingssnelheid</td>
<td>Niet bepaald.</td>
</tr>
</tbody>
</table>

| Oplosbaarheid in/mengbaarheid met Water bij 20 °C: | 405 g/l |
| Verdelingscoëfficiënt (n-octanol/water): | Niet bepaald. |
| Viscositeit |  |
| Dynamisch: | Niet bepaald. |
| Kinematisch: | Niet bepaald. |
| Oplosmiddelgehalte: |  |
| Organisch oplosmiddel: | 0,0 % |
| VOC (EG) | 0,00 % |

| 9.2 Overige informatie | Geen verdere relevante informatie verkrijgbaar. |

RUBRIEK 10: Stabiliteit en reactiviteit

- 10.1 Reactiviteit
- 10.2 Chemische stabilité
- 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 ontbindingsprodukten bekend.

RUBRIEK 11: Toxicologische informatie

- 11.1 Informatie over toxicologische effecten
- Acute toxiciteit

Indelingsrelevantie LD/LC50-waarden:

- 75-56-9 propyleenoxide

<table>
<thead>
<tr>
<th>Oraal</th>
<th>LD50</th>
<th>380 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermaal</td>
<td>LD50</td>
<td>1245 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Primaire aandoening:
- Huidcorrosie/-irritatie Prikkelt de huid en de slijmvlies.
- Ernstig oogletsel/oogirritatie Sterk prikkelend effect met gevaar voor ernstige oogbeschadiging.
- Sensibilisatie van de luchtwegen/de huid 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.
**Handelsnaam:** PROPYLENE OXIDE, ACS REAGENT

- **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:**
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
  - **PBT:** Niet bruikbaar.
  - **zPzB:** Niet bruikbaar.
- **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 terechtkomen.
  - **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 PROPYLENOXIDE
  - **IMDG, IATA** PROPYLENE OXIDE
- **14.3 Transportgevarenklasse(n)**
  - **ADR, IMDG, IATA**
    - **klasse** 3 Brandbare vloeistoffen
    - **Etiket** 3
- **14.4 Verpakkingsgroep:**
  - **ADR, IMDG, IATA** 1
- **14.5 Milieugevaren:**
  - **Marine pollutant:** Neen
- **14.6 Bijzondere voorzorgen voor de gebruiker**
  - **Kemler-getal:** Waarschuwing: Brandbare vloeistoffen 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.**

(Vervolg op blz. 8)
**Handelsnaam:** PROPYLENE OXIDE, ACS REAGENT

(Vervolg van blz. 7)

- **Transport/verdere gegevens:**
  - ADR
  - Beperkte hoeveelheden (LQ) 0
  - Uitgezonderde hoeveelheden (EQ) Code: E3
    - Grootste netto hoeveelheid per binnenverpakking: 30 ml
    - Grootste netto hoeveelheid per buitenverpakking: 300 ml
  - Vervoerscategorie 1
  - Tunnelbeperkingscode 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

- **VN "Model Regulation":** UN1280, PROPYLEENOXIDE, 3, 1

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**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.

- **Richtlijn 2012/18/EU**
  - Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I 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.

(Vervolg op blz. 9)
Veiligheidsinformatieblad
volgens 1907/2006/EG, Artikel 31

datum van de druk: 21.09.2015
Herziening van: 21.09.2015

Handelsnaam: PROPYLENE OXIDE, ACS REAGENT

(Vervolg van blz. 8)

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 rechtsbetrekkings.

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
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
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
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
Fiche de données de sécurité
selon 1907/2006/CE, Article 31

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

1.1 Identificateur de produit

Nom du produit: PROPYLENE OXIDE, ACS REAGENT

Code du produit: 20401, 20411, 20412, 20414

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: sgkck@aol.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.

GHS06 tête de mort sur deux tibias

Acute Tox. 3 H311 Toxique par contact cutané.
Acute Tox. 3 H331 Toxique par inhalation.

GHS08 danger pour la santé

Muta. 1B H340 Peut induire des anomalies génétiques.
Carc. 1B H350 Peut provoquer le cancer.

GHS05 corrosion

Eye Dam. 1 H318 Provoque des lésions oculaires graves.

(suite page 2)
Nom du produit: PROPYLENE OXIDE, ACS REAGENT

GHS07

Acute Tox. 4  H302  Nocif en cas d'ingestion.
Skin Irrit. 2  H315  Provoque une irritation cutanée.
STOT SE 3  H335  Peut irriter les voies respiratoires.

Aquatic Chronic 3  H412  Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

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  GHS05  GHS06  GHS08

· Mention d'avertissement Danger

· Composants dangereux déterminants pour l'étiquetage:
oxyde de propylène

· Mentions de danger

H224  Liquide et vapeurs extrêmement inflammables.
H302  Nocif en cas d'ingestion.
H311+H331  Toxique par contact cutané ou par inhalation.
H315  Provoque une irritation cutanée.
H318  Provoque des lésions oculaires graves.
H340  Peut induire des anomalies génétiques.
H350  Peut provoquer le cancer.
H335  Peut irriter les voies respiratoires.
H412  Nocif pour les organismes aquatiques, entraîne des effets néfastes à long terme.

· Conseils de prudence

P210  Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d’inflammation. Ne pas fumer.
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.
P310  Appeler immédiatement un CENTRE ANTIPOISON/un médecin.
P405  Garder sous clef.
P501  Éliminer le contenu/récipient 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

**SECTION 4: Premiers secours**

- **4.1 Description des premiers secours**
  - **Remarques générales:**
    - Enlever immédiatement les vêtements contaminés par le produit.
    - Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
    - Ne retirer la protection respiratoire qu'après avoir retiré les vêtements contaminés.
    - Respiration artificielle dans le cas d'une respiration irrégulière ou d'un arrêt respiratoire.
    - **Après inhalation:**
      - Donner de l'air frais ou de l'oxygène; demander d'urgence une assistance médicale.
      - 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 et 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:**
    - CO2, 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**
  - **Équipement 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. Éloigner 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.
Nom du produit: PROPYLENE OXIDE, ACS REAGENT

- 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.
Ouvrir et manipuler les récipients avec précaution.
Éviter 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:

<table>
<thead>
<tr>
<th>75-56-9 oxyde de propylène</th>
</tr>
</thead>
<tbody>
<tr>
<td>VME Valeur à long terme: 50 mg/m³, 20 ppm</td>
</tr>
<tr>
<td>C1B, M1B</td>
</tr>
</tbody>
</table>

- 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.
Nom du produit: PROPYLENE OXIDE, ACS REAGENT

Eviter tout contact avec la peau.
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. A 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.

- Matériaux 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: Liquide
  - Couleur: Incolore
  - Odeur: Caractéristique
  - Seuil olfactif: Non déterminé.

  - valeur du pH: Non déterminé.

  - Changement d'état
    - Point de fusion: -111,9 °C
    - Point d'ébullition: 34,3 °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:
    - Inférieure: 1,9 Vol %
Nom du produit: PROPYLENE OXIDE, ACS REAGENT

| Supérieure: | 15 Vol % |
| Pression de vapeur à 20 °C: | 590 hPa |
| Densité à 20 °C: | 0,8313 g/cm³ |
| Densité relative | Non déterminé. |
| Densité de vapeur | Non déterminé. |
| Vitesse d'évaporation | 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. |
| Cinémétique: | Non déterminé. |
| Teneur en solvants: | |
| Solvants organiques: | 0,0 % |
| VOC (CE) | 0,00 % |
| 9.2 Autres informations | 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

- Valeurs LD/LC50 déterminantes pour la classification:

<table>
<thead>
<tr>
<th>75-56-9 oxyde de propylène</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermique</td>
</tr>
</tbody>
</table>

- Effet primaire d'irritation:
- Corrosion cutanée/irritation cutanée Irrite la peau et les muqueuses.
- Lésions oculaires graves/irritation oculaire Effet fortement irritant avec risque d'une affection grave des yeux.
- Sensibilisation respiratoire ou cutanée 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.
**Nom du produit:** PROPYLENE OXIDE, ACS REAGENT

- **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.
- **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** UNI280
- **14.2 Nom d'expédition des Nations unies**
  - **ADR** 1280 OXYDE DE PROPYLÈNE
  - **IMDG, IATA** 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:** 339
  - **No EMS:** 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.
## SECTION 15: Informations réglementaires

### 15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement
- Directive 2012/18/UE
- Substances dangereuses désignées - ANNEXE I la substance n’est pas comprise
- 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
- Acute Tox. 3: Acute toxicity, Hazard Category 3
- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Nom du produit: PROPYLENE OXIDE, ACS REAGENT

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
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
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

· 1.1 ProduktIdentifikator
  · Handelsname: PROPYLENE OXIDE, ACS REAGENT
  · Artikelnummer: 20401, 20411, 20412, 20414
  · CAS-Nummer: 75-56-9
  · EG-Nummer: 200-879-2
  · Indexnummer: 603-055-00-4

· 1.2 Relevant identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird
  Keine weiteren relevanten Informationen verfügbar.

· 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: sgkck@aol.com
    www.emsdiasum.com
  Science Services GmbH
  Unterhachinger Str. 75
  81737 München Germany
  Tel: +49(0)89 18 93 668-0
  safety@scienceservices.de

  24h Giftnotruf Munchen: +49 (0)89 19240
  Toxikologische Abteilung der II. Medizinischen Klinik
  rechts der Isar, Munchen. - 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.

  GHS06 Totenkopf mit gekreuzten Knochen

  Acute Tox. 3  H311  Giftig bei Hautkontakt.
  Acute Tox. 3  H331  Giftig bei Einatmen.

(Fortsetzung auf Seite 2)
**Handelsname:** PROPYLENE OXIDE, ACS REAGENT

### GHS08 Gesundheitsgefahren

- **Muta. 1B** H340 Kann genetische Defekte verursachen.
- **Carc. 1B** H350 Kann Krebs erzeugen.

### GHS05 Ätzwirkung

- **Eye Dam. 1** H318 Verursacht schwere Augenschäden.

### GHS07 Acute Tox. 4

- **H302** Gesundheitsschädlich bei Verschlucken.
- **Skin Irrit. 2** H315 Verursacht Hautreizungen.
- **STOT SE 3** H335 Kann die Atemwege reizen.

- **Aquatic Chronic 3** H412 Schädlich für Wasserorganismen, mit langfristiger Wirkung.

#### 2.2 Kennzeichnungselemente
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**
  Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

#### Gefahrenpiktogramme

- GHS02
- GHS05
- GHS06
- GHS08

- **Signalwort** Gefahr

- **Gefahrbestimmende Komponenten zur Etikettierung:** Propylenoxid

#### Gefahrenhinweise

- **H224** Flüssigkeit und Dampf extrem entzündbar.
- **H302** Gesundheitsschädlich bei Verschlucken.
- **H311+H331** Giftig bei Hautkontakt oder Einatmen.
- **H315** Verursacht Hautreizungen.
- **H318** Verursacht schwere Augenschäden.
- **H340** Kann genetische Defekte verursachen.
- **H350** Kann Krebs erzeugen.
- **H335** Kann die Atemwege reizen.
- **H412** Schädlich für Wasserorganismen, mit langfristiger Wirkung.

#### Sicherheitshinweise

- **P210** Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.
- **P310** Sofort GIFTINFORMATIONZENTRUM/Arzt anrufen.
Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Handelsname: PROPYLENE OXIDE, ACS REAGENT

P405 Unter Verschluss aufbewahren.

· Zusätzliche Angaben:
 Nur für gewerbliche Anwender.
· 2.3 Sonstige Gefahren
· Ergebnisse der PBT- und vPvB-Beurteilung
· PBT: Nicht anwendbar.
· vPvB: Nicht anwendbar.

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:
 Mit Produkt verunreinigte Kleidungsstücke unverzüglich entfernen.
 Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.
 Atemschutz erst nach Entfernen verunreinigter Kleidungsstücke abnehmen.
 Bei unregelmäßiger Atmung oder Atemstillstand künstliche Beatmung.
· Nach Einatmen:
 Frischluft- oder Sauerstoffzufuhr; ärztliche Hilfe in Anspruch nehmen.
 Bei Bewußtlosigkeit Lagerung und Transport in stabiler Seitenlage.
· Nach Hautkontakt: Sofort mit Wasser und Seife abwaschen und gut nachspülen.
· Nach Augenkontakt:
 Augen bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und 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:
· 5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren
 Keine weiteren relevanten Informationen verfügbar.
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:
- 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
- Hinweise zum Brand- und Explosionsschutz:
- 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:
  - 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:

| Propylenoxid (75-56-9) | AGW Langzeitwert: 4,8 mg/m³, 2 ml/m³ |

- Zusätzliche Hinweise: Als Grundlage dienten 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 der Haut vermeiden.
  - Berührung mit den Augen und der Haut vermeiden.

- Atemschutz:
  - Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.

- Handschutz:

Schutzhandschuhe


- 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

- Aussehen:

  Form: Flüssigkeit
  Farbe: Farblos
  Geruch: Charakteristisch
  Geruchsschwelle: Nicht bestimmt.

ABSCHNITT 9: Physikalische und chemische Eigenschaften
Handelsname: PROPYLENE OXIDE, ACS REAGENT

- pH-Wert: Nicht bestimmt.
- Zustandsänderung
  Schmelzpunkt/Schmelzbereich: -111,9 °C
  Siedepunkt/Siedebereich: 34,3 °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 %
  Obere: 15 Vol %
- Dampfdruck bei 20 °C: 590 hPa
- Dichte bei 20 °C: 0,8313 g/cm³
- Relative Dichte: Nicht bestimmt.
- Verdampfungsgeschwindigkeit: Nicht bestimmt.
- Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C: 405 g/l
- Verteilungskoeffizient (n-Octanol/Wasser): Nicht bestimmt.
- Viskosität:
  Dynamisch: Nicht bestimmt.
  Kinematisch: Nicht bestimmt.
- Lösemittelgehalt:
  Organische Lösemittel: 0,0 %
  VOC (EU): 0,0 %
- 9.2 Sonstige Angaben 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

Einstufungsrelevante LD/LC50-Werte:

<table>
<thead>
<tr>
<th>Substanz</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9 Propylenoxid</td>
<td>380 mg/kg (rat)</td>
<td>1245 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

Primäre Reizwirkung:
- Ätz-/Reizwirkung auf die Haut: Reizt die Haut und die Schleimhäute.
- Schwere Augenschädigung/-reizung: Starke Reizwirkung mit Gefahr ernster Augenschäden.
- Sensibilisierung der Atemwege/Haut: Keine sensibilisierende Wirkung bekannt.
- CMR-Wirkungen (krebsverursachende, erbgutverändernde und fortpflanzungsgefährdende Wirkung): Muta. 1B, Carc. 1B

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.

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.


ABSCHNITT 14: Angaben zum Transport

14.1 UN-Nummer

ADR, IMDG, IATA: UN1280

14.2 Ordnungsgemäße UN-Versandbezeichnung

ADR: 1280 PROPYLENOXID

IMDG, IATA: PROPYLENE OXIDE

(Fortsetzung auf Seite 8)
### 14.3 Transportgefahrenklassen

- **ADR, IMDG, IATA**

<table>
<thead>
<tr>
<th>Klasse</th>
<th>Gefahrzettel</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Entzündbare flüssige Stoffe</td>
<td>3</td>
</tr>
</tbody>
</table>

### 14.4 Verpackungsgruppe

- **ADR, IMDG, IATA**

### 14.5 Umweltgefahren:

- **Marine pollutant:** Nein

### 14.6 Besondere Vorsichtsmaßnahmen für den Verwender

- **Kemler-Zahl:** 339
- **EMS-Nummer:** F-E,S-D

### 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code

- **Nicht anwendbar.**

### Transport/weitere Angaben:

<table>
<thead>
<tr>
<th>ADR</th>
<th>Begrenzte Menge (LQ)</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freigestellte Mengen (EQ)</td>
<td>Code: E3</td>
<td>Höchste Nettomenge je Innenverpackung: 30 ml</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Höchste Nettomenge je Außenverpackung: 300 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Limited quantities (LQ)</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exected quantities (EQ)</td>
<td>Code: E3</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maximum net quantity per outer packaging: 300 ml</td>
</tr>
</tbody>
</table>

### UN "Model Regulation":

- UN1280, PROPYLENOXID, 3, I

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**ABSCHNITT 15: Rechtsvorschriften**

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
  - **Richtlinie 2012/18/EU**
  - **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.

- **Nationale Vorschriften:**

  - **Hinweise zur Beschäftigungsbeschränkung:**
    Arbeitnehmer dürfen diesem Gefahrstoff nicht ausgesetzt sein. Im Einzelfall kann die Behörde Ausnahmen zulassen.

(Fortsetzung auf Seite 9)
Sicherheitsdatenblatt
gemäß 1907/2006/EG, Artikel 31

Handelsname: PROPYLENE OXIDE, ACS REAGENT

- Technische Anleitung Luft:
<table>
<thead>
<tr>
<th>Klasse</th>
<th>Anteil in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>100,0</td>
</tr>
</tbody>
</table>

- 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 Produkt eigenschaften 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
  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
  Acute Tox. 3: Acute toxicity, Hazard Category 3
  Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  Mutat. 1B: Germ cell mutagenicity, Hazard Category 1B
  Carec. 1B: Carcinogenicity, Hazard Category 1B
  STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
  Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

1.1 Identificatore del prodotto

Denominazione commerciale: PROPYLENE OXIDE, ACS REAGENT

Articolo numero: 20401, 20411, 20412, 20414

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.

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: sgkcck@aol.com
www.emsdiiasum.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.

GHS06 teschio e tibie incrociate

Acute Tox. 3 H311 Tossico per contatto con la pelle.
Acute Tox. 3 H331 Tossico se inalato.

GHS08 pericolo per la salute

Muta. 1B H340 Può provocare alterazioni genetiche.
Carc. 1B H350 Può provocare il cancro.

(continua a pagina 2)
Denominazione commerciale: PROPYLENE OXIDE, ACS REAGENT

(Segue da pagina 1)

GHS05 corrosione

Eye Dam. 1 H318 Provoca gravi lesioni oculari.

GHS07

Acute Tox. 4 H302 Nocivo se ingerito.
Skin Irrit. 2 H315 Provoca irritazione cutanea.
STOT SE 3 H335 Può irritare le vie respiratorie.

Aquatic Chronic 3 H412 Nocivo per gli organismi acquatici con effetti di lunga durata.

- 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 GHS05 GHS06 GHS08

- Avvertenza Pericolo
- Componenti pericolosi che ne determinano l'etichettatura:
ossido di propilene
- Indicazioni di pericolo
H224 Liquido e vapori altamente infiammabili.
H302 Nocivo se ingerito.
H311+H331 Tossico a contatto con la pelle o se inalato.
H315 Provoca irritazione cutanea.
H318 Provoca gravi lesioni oculari.
H340 Può provocare alterazioni genetiche.
H350 Può provocare il cancro.
H335 Può irritare le vie respiratorie.
H412 Nocivo per gli organismi acquatici con effetti di lunga durata.
- Consigli di prudenza
P210 Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.
P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciaccquare la pelle/fare una doccia.
P305+P351+P338 IN CASO DI CONTATTO CON GLI OCCHI: sciaccquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciaccquare.
P310 Contattare immediatamente un CENTRO ANTIVELENI/un medico.
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.

(continua a pagina 3)
SEZIONE 3: Composizione/informazioni sugli ingredienti

- **3.1 Caratteristiche chimiche: Sostanze**
  - **Numero CAS**
    - 75-56-9 ossido di propilene
  - **Numero/i di identificazione**
    - **Numeri CE:** 200-879-2
    - **Numero indice:** 603-055-00-4
  - **SVHC**
    - 75-56-9 ossido di propilene

SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
  - **Indicazioni generali:**
    - Allontanare immediatamente gli abiti contaminati dal prodotto.
    - 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.
    - Levarsi la maschera protettiva solamente dopo aver tolti gli abiti contaminati.
    - In caso di respirazione irregolare o di blocco respiratorio praticare la respirazione artificiale.
  - **Inalazione:**
    - Portare il soggetto in zona ben areata o somministrare ossigeno; chiedere l’intervento di un 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 e 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:**
    - CO2, 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.
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

7.3 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.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

8.1 Parametri di controllo

8.2 Controlli dell'esposizione

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

Ulteriori indicazioni sullo stoccaggio misto: Non necessario.

Ulteriori indicazioni relative alle condizioni di immagazzinamento:

Ulteriori indicazioni relative alle condizioni di immagazzinamento:

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

8.2 Controlli dell'esposizione

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 la pelle.
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:


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


SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali
· Indicazioni generali
  · Aspetto:
    Forma: Liquido
    Colore: Incolore
  · Odore: Caratteristico
  · Soglia olfattiva: Non definito.
  · valori di pH: Non definito.
  · Cambiamento di stato
    Temperatura di fusione/ambito di fusione: -111,9 °C
    Temperatura di ebollizione/ambito di ebollizione: 34,3 °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:
    Inferiore: 1,9 Vol %
Denominazione commerciale: PROPYLENE OXIDE, ACS REAGENT

Superiore: 15 Vol %
- Tensione di vapore a 20 °C: 590 hPa
- Densità a 20 °C: 0,8313 g/cm³
- 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
- Coefficiente di distribuzione (n-Octanol/acqua): Non definito.
- Viscosità:
  - Dinamica: Non definito.
  - Cinematica: Non definito.
- Tenore del solvente:
  - Solventi organici: 0,0 %
  - VOC (CE) 0,00 %
- 9.2 Altre informazioni 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:
  - Corrosione/irritazione cutanea Irrita la pelle e le mucose.
  - Lesioni oculari gravi/Irritazioni oculari gravi Forte irritazione con rischio di gravi lesioni oculari.
  - Sensibilizzazione respiratoria o cutanea 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.
Denominazione commerciale: PROPYLENE OXIDE, ACS REAGENT

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:
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.
- 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

14.1 Numero ONU
- ADR, IMDG, IATA UN1280
14.2 Nome di spedizione dell’ONU
- ADR 1280 OSSIDO DI PROPILENE
- IMDG, IATA PROPYLENE OXIDE
14.3 Classi di pericolo connesso al trasporto
- ADR, IMDG, IATA
  - Classe 3 Liquidi infiammabili
  - Etichetta 3
14.4 Gruppo di imballaggio
- ADR, IMDG, IATA 1
14.5 Pericoli per l’ambiente:
- Marine pollutant: No
14.6 Precauzioni speciali per gli utilizzatori
- Attentazione: Liquidi infiammabili
  - Numero Kemler: 339
  - Numero EMS: F-E,S-D
14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC
- Non applicabile.
**Scheda di dati di sicurezza**  
*ai sensi del regolamento 1907/2006/CE, Articolo 31*

Denominazione commerciale: PROPYLENE OXIDE, ACS REAGENT

(Segue da pagina 7)

- **Trasporto/ulteriori indicazioni:**
  - ADR
    - Quantità limitate (LQ) 0
    - Quantità esenti (EQ) Codice: E3
  - Categoria di trasporto 1
  - Codice di restrizione in galleria 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

- **UN "Model Regulation":** UN1280, OSSIDO DI PROPILENE, 3, 1

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**SEZIONE 15: Informazioni sulla regolamentazione**

- **15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
  - Direttiva 2012/18/UE
  - Sostanze pericolose specificate - ALLEGATO I La sostanza non è contenuta

- **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.

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**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
  - Acute Tox. 3: Acute toxicity, Hazard Category 3
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

(continua a pagina 9)
**Denominazione commerciale:** PROPYLENE OXIDE, ACS REAGENT

- **Carc. 1B:** Carcinogenicity, Hazard Category 1B
- **STOT SE 3:** Specific target organ toxicity - Single exposure, Hazard Category 3
- **Aquatic Chronic 3:** Hazardous to the aquatic environment - Chronic Hazard, Category 3
1. 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: PROPYLENE OXIDE, ACS REAGENT
- 상품번호: 20401, 20411, 20412, 20414
- CAS-번호: 75-56-9
- EC-번호: 200-879-2
- 색인 번호: 603-055-004
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.
- 제품의 전고 온도와 사용성의 제한: 실험 실화 학품

- 안전데이터표(Safety Data Sheet) 내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400 Fax: 215-412-8450
  email: sgkcck@aol.com
  www.emsdiasum.com
- Samchang Commercial Co., Ltd.
  Yeo Eui Do
  PO Box 1110
  Seoul, Korea
  Tel: 82 2 703 3040
  Fax: 82 2 717 3298
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호: ChemTrec 1-800-424-9300 Contract CCN7661 1-703-527-3887

2. 유해성.위험성

- 순물질 또는 혼합물의 분류
  - 화염
    인화성 액체 구분1 H224 극인화성 액체 및 증기
    
  - 두개골과 대퇴골
  - 급성 독성(경피) 구분3 H311 피부와 접촉하면 유독함
  - 급성 독성(흡입) 구분3 H331 흡입하면 유독함
  
  - 건강에 위험
  - 생식세포 변이원성 구분1B H340 유전적인 결함을 일으킬 수 있음
  - 발암성 구분1B H350 암을 일으킬 수 있음

(2쪽에계속)
제품명: PROPYLENE OXIDE, ACS REAGENT

---

<table>
<thead>
<tr>
<th>부식</th>
</tr>
</thead>
<tbody>
<tr>
<td>심한 눈 손상/자극성 구분1 H318 눈에 심한 손상을 일으킴</td>
</tr>
</tbody>
</table>

| 급성 독성(경구) 구분4 H302 삼키면 유해함 |
| 피부 부식성/자극성 구분2 H315 피부에 자극을 일으킴 |
| 표적장기/회노출 구분3 H335 호흡기계 자극을 일으킬 수 있음 |

수생환경유해성-만성 구분3 H412 장기적인 영향에 의해 수생생물에게 유해함

---

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

그림

GHS02 GHS05 GHS06 GHS08

신호어 위험

상표상어명학 혀위험성이표시된성분: propylene oxide

유해 위험 문구
극한화성 액체 및 증기
삼키면 유해함
피부에 접촉하거나 흡입하면 유독함.
피부에 자극을 일으킴
눈에 심한 손상을 일으킴

유전적인 결함을 일으킬 수 있음
암을 일으킬 수 있음

호흡기계 자극을 일으킬 수 있음
장기적인 영향에 의해 수생생물에게 유해함

예방조치 문구
열, 스파크, 화염, 고열로부터 멀리하시오 - 금연
피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시고 피부를 물/사워로 행구시오.
눈에 뿌으면 몇 분간 물로 세척시켜 씻으시오. 가능하면 뱃트렌즈를 제거하시고 계속 씻으시오.

즉시 특성물질센터/병원 연락 필요.
잠금장치가 있는 저장장소에 저장하시오.
현지/지역/국가/국제 규정에 따라 내용물/용기 노출

기타 유해성

PBT(진통성, 생물농축성, 독성 물질) 및 vPvB(고 전투성, 고 생물농축성 물질) 평가 결과

PBT(진통성, 생물농축성, 독성 물질): 해당사항 없음.
vPvB(고 전투성, 고 생물농축성 물질): 해당사항 없음.
안전지침서
제31조의 1907/2006/EC에 따라

제품명: PROPYLENE OXIDE, ACS REAGENT

3 구성성분의 명칭 및 함유량

- 화학적 특성: 화학물질
- CAS-번호표시
  75-56-9 propylene oxide
- 식별 번호
- EC 의번호: 200-879-2
- 색인 번호: 603-055-00-4

4 응급조치 요령

- 응급조치요령 내용
- 일반적 정보: 
  이제품에 의해 오염된 의상은 즉시 제거한다.
  중독 중상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48시 간동안은
  의료진의 관할을 받 야 한다.
  반드시 오염된 의상을 완전히 제거한 후에 호흡 보호기를 떠 어 냈다.
  불규칙적인 호흡이나 호흡 정지 시에는 인공 호흡을 실시한다.
- 흡입했을 때:
  신선한 공기나 산소를 공급받고, 의료진의 도움을 구한다.
  환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- 피부에 접촉했을 때: 즉시 물과 비누로 씻고 깨끗한 상태로 한다.
- 눈에 들어갔을 때: 화학물질이 눈을 끓여 뜯어야 할 수 있으므로, 의사와 상담한 다.
- 맛았을 때: 즉시 의사의 도움을 구한다.
- 기타 의사의 주의사항:
  가장 중요한 급 압 축방, 내과 및 임상 추적적 정보가 존재하지 않습니다.
  특이적인 의료처치 및 특별치료가 필요함을 시사하는 징후, 추가적인 정보가 존재하지 않습니다.

5 폭발. 화재시 대처방법

- 소화재
  적절한 소화재:
  이산화 탄소 전화용 석회 가루 또는 물방울 사용하고, 다른 화재는 물을 분사 하거나 알코올
  이 함유된 기름으로 끓여 냈다.
  구조용 화학물질이나 화학물질로 화재가 발생하는 특별 유해성 화학물질 사용으로 초래하지 않습니다.
- 염소판에 대한 보호사용
- 화재 발생시 착용할 보호구 및 예방조치: 호흡보호장비설치.

6 누출 사고 시 대처방법

- 개인정보 예방조치: 보호장비 및 응급처치 절차는 제7장 참조하시오.
- 환경 관련 예방조치:
  - 악 기, 온도, 습도는 적정 시킨다.
  - 하수도/하수면위의물/지하수로 도달하지 않게 한다.
- 및 폐기 및 정화 방법과 소재:
  - 악기 혼합물 (물질) 모래, 규조토, 산성 결합 물, 일반 결합 물, 토바에 흡입되도록 한다.
  - 항목 13에 따라 오염된 물질을 그대로 가로로 처분한다.
  - 중분한 환기가 되도록 한다.
- 타 석화 착조
  - 안 전 관 리에 대한 정보는 제7장 참조하시오.
  - 개인정보 보호장비에 대한 정보는 제8장 참조하시오.

개정: 2015.09.21
제품명: PROPYLENE OXIDE, ACS REAGENT

7 취급 및 저장방법

취급:
- 안전 취급을 위한 예방조치
  작업장에서는 통풍이 잘되고, 습기 저해가 잘되는 대비가 되어야 한다. 조심스럽게 개봉하거나 취급할 경우가 있다. 연무질이 형성되는 것을 피한다.
- 화재 및 폭발 사고 예방대책에 관한 정보:
  발화 요소는 멀리 둔다. 급 연, 열로부터 보호한다.
  정전 기이 충전된 경우로부터 보호한다.
  호흡보호장을 항상 비치한다.
- 흩날위협성에 관한 저장 조건
  보관:
  - 안전한 저장 방법: 차가운 장소에 보관한다.
  - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필요 없음
- 보관 조건에 관한 추가적인 정보:
  - 용기를 세지 않게 밀폐한 것을 보관한다.
  - 오기를 가스가 세지 않게 밀폐한다.
  - 밀폐된 용기 속에 서서히 전조하계 보관한다.
  - 열이나 직사광선으로부터 보호한다.
- 구체적 화재 및 폭발 사고 예방대책에 관한 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

취급 및 저장:
- 취급:
  철단시설 디자인에 대한 추가정보: 더 이상의 자료는 없음. 항목7을 참고하시오.
- 통제 변수
  화학물질의 노출기준, 생물학적 노출기준 등:
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TLV (ROK)</td>
<td>장기간의값: 5 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>PEL (USA)</td>
<td>장기간의값: 240 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>REL (USA)</td>
<td>See Pocket Guide App. A</td>
</tr>
<tr>
<td>TLV (USA)</td>
<td>장기간의값: 4.8 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>DSEN</td>
<td></td>
</tr>
</tbody>
</table>
- 후가정보: 제조자 및 장소의 정보를 기초로 사용했다.
- 노출 통제
  개인보호구
  일반적보호조치를 위생조치:
  식료품, 음료수와 사료로부터 멀리 떨어뜨려 놓는다.
  더러워지거나 온도가 민들어 은은한 조에서 식사하지 않는다.
  휴식 전이나 작업이 끝날때마다 손을 씻는다.
  방호복은 따로 보관한다.
  피부와의 접촉은 피한다.
  눈과 피부와의 접촉은 피한다.
- 호흡기 보호:
  단시간 또는 경미한 오염의 경우에는 호흡과 기를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호장비를 사용한다.
제품명: PROPYLENE OXIDE, ACS REAGENT

손 보호:

보호용 장갑

장갑재질은 제품/원료/조제를 투과시켜야하고, 내구성이어야한다. 테스트를 하지 않은 제품/조제/화학 혼합물에 적합한 장갑재질에 대한 추천이 없다. 투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

장갑의재료
적합한장갑의선택은제조업체가뿐아니라품질기준이도고려하여이루어져야하고제조업자에따라도로게선정되어야한다.

장갑 재료의 투과 시간 정확한관통시간은보호장갑제조자에의하여야인지되고, 준수되어야한다.

눈 보호:

광조이는보안경

9 물리화학적 특성

<table>
<thead>
<tr>
<th>기본 물리 및 화학적 특성에 대한 정보</th>
<th>일반정보</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 현상</td>
<td>digits</td>
</tr>
<tr>
<td>• 형태</td>
<td>液体</td>
</tr>
<tr>
<td>• 색</td>
<td>透明</td>
</tr>
<tr>
<td>• 녹는점/얼음점</td>
<td>-111.9 °C</td>
</tr>
<tr>
<td>• 초기 끓는점과 끓는점 범위</td>
<td>34.3 °C</td>
</tr>
<tr>
<td>• 최고점기:</td>
<td>430 °C</td>
</tr>
<tr>
<td>• 전하온도:</td>
<td> </td>
</tr>
<tr>
<td>• 자기침체:</td>
<td>充電</td>
</tr>
<tr>
<td>• 폭발위험</td>
<td>이제품은 폭발위험성이없지만, 폭발가능성이있는정기화합물/공기화합물의형성가능성이있다.</td>
</tr>
<tr>
<td>• 인화 또는 폭발 범위의 상한/하한</td>
<td>아래로: 1.9 Vol % 위로: 15 Vol %</td>
</tr>
<tr>
<td>• 증기압 20℃:</td>
<td>590 hPa</td>
</tr>
<tr>
<td>• 밀도 20℃:</td>
<td>0.8313 g/cm³</td>
</tr>
<tr>
<td>• 비중:</td>
<td> </td>
</tr>
<tr>
<td>• 증기밀도:</td>
<td> </td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>속성</th>
<th>값</th>
</tr>
</thead>
<tbody>
<tr>
<td>증발 속도</td>
<td>알맞지않다</td>
</tr>
<tr>
<td>증해도:</td>
<td>끓의경우 20°C: 405 g/l</td>
</tr>
<tr>
<td>분류/분배계수:</td>
<td>알맞지않다</td>
</tr>
<tr>
<td>유기용매 용매내용물</td>
<td>0.0 % VOC (EU) 0.00 %</td>
</tr>
<tr>
<td>기타 정보</td>
<td>추가적인 정보가 존재하지 않습니다.</td>
</tr>
</tbody>
</table>

10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성: 규정에따라사용할경우해체는없다
- 유해반응 가능성: 위험한반응의가능성/피해야 할 조건: 규정에따라사용할경우해체는없다
- 피해가할 조건: 추가적인 정보가 존재하지 않습니다.
- 혼합 급지물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

11 특성에 관한 정보

- 특성학적 영향에 대한 정보
- 금성 특성:
  - LD/LC50-수치에 따른 분류:
    - 75-56-9 propylene oxide
    - 구강의 LD50 380 mg/kg (rat)
    - 피부의 LD50 1245 mg/kg (rabbit)
- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부의미세모세포자극한다.
- 심한 눈 손상 또는 자극성: 심각한안구상처의위험이있는강한자극
- 감각화: 민감한미세동물에없는것으로알려져있다.
- 다음 론플의 잠재적인 효과에 대한 정보
- CMR-효과 (암, 유발, 돌연변이성 그리고 생식 특성)
- 생식성 변이성 구분1B, 발암성 구분1B

12 환경에 미치는 영향

- 특성
- 수생특성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성: 추가적인 정보가 존재하지 않습니다.
- 환경시험에서의 행동:
- 생물농축 잠재성: 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성: 추가적인 정보가 존재하지 않습니다.
제품명: PROPYLENE OXIDE, ACS REAGENT

- 추가적인 생태학 정보:
- 일반 특성:
  수질오염등급 3 (자체등급분류): 심한급수질오염이된 지하수나 하천으로는하수도망에도달하지않게한다. 역시 극소수의량이라도안된다.
  - PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 전투성, 고 생물농축성 물질) 평가 결과
  - PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 전투성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- 폐기물 처리 방법
  - 원고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- 비위생적 포장:
  - 원고: 당국의지침에일관된쓰레기처리.
  - 주 현 세정제: 경에따라서세제가첨가된물

14 운송에 필요한 정보

- 유엔 번호
  - ADR, IMDG, IATA
  - UN 적정 선적명
  - ADR, IMDG, IATA 1280 PROPYLENE OXIDE
  - 운송 위험 클래스
    - ADR, IMDG, IATA
    - 등급
      3 발화성용액
    - 위험물 라벨
      3
    - 용기등급
      - ADR, IMDG, IATA
      1
    - 환경적 유해물질
      - 해양오염물질: 아니오
    - 이용자 특별 예방조치
      - 위험 코드: 경고: 발화성용액
      - EMS-번호: F-E-S-D
    - MARPOL73/78(선박으로부터의해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 발크(bulk) 운송
      - 해당사항 없음.

(6쪽부터계속)
**제품명: PROPYLENE OXIDE, ACS REAGENT**

<table>
<thead>
<tr>
<th>운송/추가 정보:</th>
</tr>
</thead>
<tbody>
<tr>
<td>· ADR</td>
</tr>
<tr>
<td>· 항정 수량 (LQ)</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>Code: E3</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 300 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>운송 구분</th>
</tr>
</thead>
<tbody>
<tr>
<td>· 터널 제한 코드</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Code: D/E</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Limited quantities (LQ)</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>Code: E3</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 300 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN “모범 규제”:</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1280, PROPYLENE OXIDE, 3, I</td>
</tr>
</tbody>
</table>

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**15 법적 규제현황**

<table>
<thead>
<tr>
<th>해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Korean Existing Chemical Inventory</td>
</tr>
<tr>
<td>75-56-9 propylene oxide</td>
</tr>
<tr>
<td>· GHS 표준 요소</td>
</tr>
<tr>
<td>본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.</td>
</tr>
<tr>
<td>· 위험 도표</td>
</tr>
</tbody>
</table>

![GHS02 GHS05 GHS06 GHS08]

<table>
<thead>
<tr>
<th>표지어 위험</th>
</tr>
</thead>
<tbody>
<tr>
<td>· 상표상 명백한 위험성이 표시된 성분:</td>
</tr>
<tr>
<td>propylene oxide</td>
</tr>
<tr>
<td>· 위험 훼란</td>
</tr>
<tr>
<td>극인화성 액체 및 증기</td>
</tr>
<tr>
<td>삶기면 유해함</td>
</tr>
<tr>
<td>피부에 접촉하거나 흡입하면 유독함</td>
</tr>
<tr>
<td>피부에 자극을 일으킴</td>
</tr>
<tr>
<td>눈에 심한 손상을 일으킴</td>
</tr>
<tr>
<td>유전적인 결함을 일으킬 수 있음</td>
</tr>
<tr>
<td>암을 일으킬 수 있음</td>
</tr>
<tr>
<td>호흡기제 자극을 일으킬 수 있음</td>
</tr>
<tr>
<td>장기적인 영향에 의해 수생생물에게 유해함</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>주의 훼란</th>
</tr>
</thead>
<tbody>
<tr>
<td>· 염스파크/화염/고열로부터 멀리하시오 – 금연</td>
</tr>
<tr>
<td>피부(포발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구하시오.</td>
</tr>
<tr>
<td>눈에 뿌으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘텍트렌즈를 제거하시오 계속 씻으시오.</td>
</tr>
<tr>
<td>즉시 독성물질침설/병원 연락 필요.</td>
</tr>
<tr>
<td>잠금장치가 있는 저장장소에 저장하시오.</td>
</tr>
</tbody>
</table>

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(7쪽부터 계속)
제품명: PROPYLENE OXIDE, ACS REAGENT

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

국내규정:

사용제한에 대한 정보:
노동자들은 이러한 위험물질을 내버리지 말아야 한다. 개별적인 경우에 관해은 예외를 허가할 수 있다.

화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항
이 보고는 우리지식에 대한 오늘날의 상태에 대하여 평가하고 있다. 하지만 이 보고서는 생산특성에 관한 보증은 기술하지 않았으며 계약적인 법률관계에 기반을 두고 있지도 않다.

최초 작성일자: 2015.09.21
개정 횟수 및 최종 개정일자: 1 / 2015.09.21
약어와 두문자어:
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)
LD50: Lethal dose, 50 percent
LC50: Lethal concentration, 50 percent
인화성 액체, 구분1: Flammable liquids, Hazard Category 1
급성 독성(경구), 구분4: Acute toxicity, Hazard Category 4
급성 독성(경피), 구분3: Acute toxicity, Hazard Category 3
피부 부식성/자극성, 구분2: Skin corrosion/irritation, Hazard Category 2
심한 눈 손상/자극성, 구분1: Serious eye damage/eye irritation, Hazard Category 1
표적 장기-1회 노출, 구분1B: Germ cell mutagenicity, Hazard Category 1B
수생환경 유해성, 구분3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
1 Pengenalpastian bahan/sediaan dan syarikat

· Pengenal pasti produk
  · Nama dagang: PROPYLENE OXIDE, ACS REAGENT
  · Nombor artikel: 20401, 20411, 20412, 20414
  · Nombor CAS: 75-56-9
  · Nombor EC: 200-879-2
  · Nombor EU: 603-055-00-4
  · Kegunaan berkaitan yang dikenal pasti bagi bahan atau campuran dan penggunaan
    Tiadak maklumat lanjut yang diperoleh.
  · Penggunaan bahan/sediaan Bahan kimia makmal
  · Perincian pembekal risalah data keselamatan
  · Pengilang/Pembekal:
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400 Fax: 215-412-8450
    email: sgkcck@aol.com
    www.emsdiasum.com
  · Maklumat lanjut dapat diperoleh daripada: Product safety department
  · Nombor telefon kecemasan:
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

2 Pengenalpastian bahaya

· Pengelasan bahan atau campuran
  · Nyalaan
  
  
  
  Cec. M. Bkr 1 H224 Cecair dan wap paling mudah terbakar.

  · Tengkorak dan tulang bersilang
  
  
  
  Toks. Akut 3 H311 Toksik jika terkena kulit.
  Toks. Akut 3 H331 Toksik jika tersedut.

  · Bahaya kesihatan
  
  
  
  Muta. 1B H340 Boleh menyebabkan kecacatan genetik.
  Kars. 1B H350 Boleh menyebabkan kanser.

  · Kakisan
  
  
  
  Kros. Mata 1 H318 Menyebabkan kerosakan mata yang serius.

(Bersambung ke halaman 2)
Nama dagang: PROPYLENE OXIDE, ACS REAGENT

Toks. Akut 4  H302  Memudaratkan jika tertelan.
STOT SE 3  H335  Boleh menyebabkan kerengsaan pernafasan.

Akuatik Kronik 3  H412  Memudaratkan kepada hidupan akuatik dengan kesan kekal berpanjangan.

Melabelkan unsur

- Unsur label GHS Bahan ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- Piktogram hazard

   GHS02  GHS05  GHS06  GHS08

Perkataan isyarat Bahaya

Komponen pelabelan yang menentukan bahaya:
propylene oxide

Pernyataan hazard
Ceair dan wap paling mudah terbakar.
Memudaratkan jika tertelan.
Toxik jika terkena kulit atau tersedut.
Menyebabkan kerengsaan kulit.
Menyebabkan kerosakan mata yang serius.
Boleh menyebabkan kecacatan genetik.
Boleh menyebabkan kanser.
Boleh menyebabkan kerengsaan pernafasan.
Memudaratkan kepada hidupan akuatik dengan kesan kekal berpanjangan.

Pernyataan langkah perlindungan
Jauhkan daripada haba/percikan api/nyalaan terbakar/permukaan panas - Dilarang merokok.
JIKA TERKENA KULIT (atau rambut):  Tanggalkan semua pakaian yang tercemar dengan segera. Basuh kulit dengan air/pancuran.
JIKA TERKENA MATA: Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika ada dan dapat dilakukan dengan mudah. Teruskan membilas.
Segera hubungi PUSAT RACUN/doktor.
Simpan di tempat berkunci.
Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

Bahaya lain

Keputusan penilaian PBT dan vPvB
- PBT: Tidak berkenaan
- vPvB: Tidak berkenaan

3 Komposisi/maklumat ramuan

- Ciri kimia: Bahan
- Keterangan No. CAS
  75-56-9 propylene oxide
- Nombor pengenalpastian
- Nombor EC: 200-879-2
4 Langkah pertolongan cemas

- Keterangan langkah pertolongan cemas
- Maklumat am:
  Segera tanggalkan mana-mana pakaian yang terkena produk.
  Gejala keracunan boleh berlaku selepas beberapa jam, maka rawatan perubatan hendaklah diberikan sekurang-kurangnya 48 jam selepas kemalangan.
  TANGGALAN kelengkapan pernafasan hanya selepas pakaian yang tercemar telah ditanggalkan semuanya.
  Berikan pernafasan bantuan jika pernafasan tidak tetap atau terhenti.
- Jika tersedut:
  Berikan udara bersih atau oksigen, dapatkan rawatan doktor.
  Jika mangsa tidak sedarkan diri, letakkan pesakit dengan stabilt dalam kedudukan mengiring untuk diangkat.
- Jika terkena kulit:
  Segera basuh dengan air dan sabun serta bilas bersih-bersih.
- Jika terkena mata:
  Bilas mata sambil membukanya di bawah air yang mengalir selama beberapa minit. Kemudian hubungi doktor.
- Jika tertelan:
  Segera hubungi doctor.
- Maklumat untuk doktor:
  Gejala dan kesan paling penting, akut dan lewat
  Tiadak maklumat lanjut yang diperoleh.
  Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan
  Tiadak maklumat lanjut yang diperoleh.

5 Langkah memadam kebakaran

- Bahan pemadam api
- Agen pemadam yang sesuai:
  CO2, serbuk atau semburan air. Padam kebakaran besar dengan semburan air atau busa rintangan alkohol.
- Bahaya khusus yang timbul daripada bahan atau campuran
  Tiadak maklumat lanjut yang diperoleh.
- Panduan kepada pemadam kebakaran
  Kelengkapan perlindungan: Peralatan perlindungan pernafasan mulut.

6 Langkah menangani pelepasan yang tidak disengajakan

- Langkah perlindungan diri, kelengkapan peredungan dan prosedur kecemasan
  Pakai kelengkapan perlindungan. Jauhkan mereka yang tidak dilindungi dari kawasan tercemar.
- Langkah perlindungan alam sekitar:
  Cairkan dengan air yang banyak.
  Jangan biarkannya memasuki pembentung/air permukaan atau tanah.
- Kaedah dan bahan untuk pembentungan dan pembersihan:
  Serap dengan bahan ceccar pengikut (pasir, diatomit, pengikut asid, pengikut semesta, habuk papan)
  Lupuskan bahan tercemar sebagai sisa mengikut perkara 13.
  Pastikan pengalihudaraan mencukupi.
- Rujukan ke bahagian lain
  Lihat Bahagian 7 untuk maklumat pengendalian yang selamat.
  Lihat Bahagian 8 untuk maklumat kelengkapan perlindungan diri.
  Lihat Bahagian 13 untuk maklumat pelupusan.

(Bersambung ke halaman 4)
## 7 Pengendalian dan penyimpanan

- **Pengendalian:**
  - **Langkah perlindungan untuk pengendalian selamat**
  - **Maklumat kebakaran dan perlindungan daripada letupan:**

- **Keadaan untuk penyimpanan selamat, termasuk apa-apa ketakserasian**
  - **Penyimpanan:**
    - Keperluan yang mesti dipenuhi oleh bilik stor dan ruang simpanan. Simpan di tempat sejuk. 
    - **Maklumat penyimpanan di dalam satu tempat penyimpanan yang biasa:** Tidak diperlukan.
  - **Maklumat lanjut tentang syarat penyimpanan:**

- **Kegunaan akhir yang khusus**
  - Tiadak maklumat lanjut yang diperoleh.

### 8 Kawalan pendedahan/perlindungan diri

- **Maklumat tambahan tentang reka bentuk kemudahan teknikal:** Tiada maklumat lanjut, lihat perkara 7.

- **Parameter kawalan**

<table>
<thead>
<tr>
<th>Ramuan dengan nilai had yang memerlukan pemantauan di tempat kerja:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>75-56-9 propylene oxide</strong></td>
</tr>
<tr>
<td>PEL Nilai jangka panjang: 48 mg/m³, 20 ppm</td>
</tr>
</tbody>
</table>

- **Maklumat tambahan:** Senarai yang sah semasa pembuatan digunakan sebagai asas.

- **Kawalan pendedahan**
  - **Kelengkapan perlindungan diri:**
  - **Langkah perlindungan dan kebersihan am:**

- **Perlindungan pernafasan:**
  Jika berlaku pendedahan sekejap atau sedikit pencemaran, gunakan alat penapis pernafasan. Jika berlaku pendedahan yang intensif atau berpanjangan, gunakan alat pernafasan perlindungan serba lengkap.

- **Perlindungan tangan:**
  - **Sarung tangan pelindung:**
    Bahan sarung tangan hendaklah telus dan kalis terhadap produk/bahan/sediaan.
Nama dagang: PROPYLENE OXIDE, ACS REAGENT

Oleh sebab tiada ujian yang dijalankan, maka tiada syor bagi bahan sarung tangan yang boleh diberikan untuk produk/sediaan/campuran kimia. Pemilihan bahan sarung tangan berdasarkan waktu penembusan, kadar pembauran dan degradasi.

- Bahan sarung tangan
  Pemilihan sarung tangan yang sesuai bukan hanya bergantung pada bahannya, tetapi juga tanda kualiti lainnya serta perbezaannya daripada satu pengeluar dengan pengeluar yang lain.

- Jangka masa penyerapan bahan sarung tangan
  Waktu kemunculan yang tepat hendaklah diperoleh pengeluar sarung tangan pelindung dan hendaklah dipatuhi.

- Perlindungan mata:
  Gogal bertutup rapat

9 Ciri fizik dan kimia

- Maklumat tentang ciri fizik dan kimia
  - Maklumat Am
    - Rupa:
      - Bentuk: Cecair
      - Warna: Tidak berwarna
    - Bau: Ciri
    - Had ambang bau: Tidak ditentukan.
  - Nilai pH: Tidak ditentukan.

- Perubahan pada keadaan
  - Takat lebur/Julat lebur: -111,9 °C
  - Takat didih/Julat didih: 34,3 °C

- Takat kilat: -37 °C

- Kemudahan bakaran (pepejal, gas) Tidak berkenaan

- Suhu pencucuhan: 430 °C

- Suhu penguraian: Tidak ditentukan.

- Pencucuhan sendiri Tidak ditentukan.

- Bahaya letupan: Produk tidak mudah meletup. Walau bagaimanapun, pembentukan campuran udara/wap mungkin berlaku.

- Had letupan:
  - Bawah: 1,9 Vol %
  - Atas: 15 Vol %

- Tekanan wap pada 20 °C: 590 hPa

- Ketumpatan pada 20 °C: 0,8313 g/cm³
  - Ketumpatan relatif Tidak ditentukan.
  - Ketumpatan wap Tidak ditentukan.
  - Kadar penyejatan Tidak ditentukan.

- Keterlarutan dalam / Keterlarutcampuran dengan
  - Air pada 20 °C: 405 g/l

- Pekali pengasingan (n-oktanol/air) Tidak ditentukan.
**Nama dagang:** PROPYLENE OXIDE, ACS REAGENT

<table>
<thead>
<tr>
<th>· Kelikatan:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinamik:</td>
</tr>
<tr>
<td>Kinematik:</td>
</tr>
<tr>
<td>Pelarut organik:</td>
</tr>
<tr>
<td>· Maklumat lain</td>
</tr>
</tbody>
</table>

### 10 Kestabilan dan kereaktifan

| · Kereaktifan                |
| · Kestabilan kimia           |
| · Penguraian terma/keadaan yang perlu dielakukan: Tiada penguraian jika digunakan mengikut spesifikasi. |
| · Kemungkinan tindak balas berbahaya: Tiada tindak balas berbahaya yang diketahui. |
| · Keadaan yang perlu dielakukan: Tiada maklumat lanjut yang diperoleh. |
| · Bahan tidak serasi: Tiada maklumat lanjut yang diperoleh. |
| · Produk penguraian yang berbahaya: Tiada produk penguraian berbahaya yang diketahui. |

### 11 Maklumat toksikologi

<table>
<thead>
<tr>
<th>· Nilai LD/LC50 yang berkaitan untuk pengelasan:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>75-56-9 propylene oxide</strong></td>
</tr>
<tr>
<td>Oral LD50 380 mg/kg (rat)</td>
</tr>
<tr>
<td>Derma LD50 1245 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

| · Kesah kerengsaan primer:                     |
| · pada kulit: Merengsa kepada kulit dan mukus membran. |
| · pada mata: Perengsa yang kuat dengan bahaya kecederaan mata yang teruk. |
| · Pemekaan: Tiada kesah pemekaan yang diketahui. |
| · Maklumat bagi kumpulan berikut tentang kesah yang mungkin timbul: |
| · Kesah CMR (karisogenesis, mutagen dan gangguan kesuburan) |
| Muta. 1B, Kars. 1B |

### 12 Maklumat ekologi

| · Ketoksikan                              |
| · Ketoksikan akuatik: Tiada maklumat lanjut yang diperoleh. |
| · Keterusan dan keterdegradasikan: Tiada maklumat lanjut yang diperoleh. |
| · Kelakuana dalam sistem alam sekitar:    |
| · Potensi bioakumulatif: Tiada maklumat lanjut yang diperoleh. |
| · Mobiliti di dalam tanah: Tiada maklumat lanjut yang diperoleh. |
| · Maklumat tambahan ekologi:              |
| · Nota am:                                |
| Bahaya air kelas 3 (Peraturan Jerman) (Penilaian kendiri): amat berbahaya kepada air |
| Jangan biarkan produk memasuki air tanah, saluran air atau sistem pembetungan, walaupun sedikit. |
| Bahaya kepada air minuman walaupun dalam amat sedikit produk kebocoran yang memasuki tanah |
| · Keputusan penilaian PBT dan vPvB         |
| · PBT: Tidak berkenaan                     |
| · vPvB: Tidak berkenaan                    |
Nama dagang: PROPYLENE OXIDE, ACS REAGENT

· Kesan buruk yang lain Tiadak maklumat lanjut yang diperoleh.

### 13 Maklumat pelupusan

· Kaedah rawatan sisa
  · Syor: Tidak boleh dilupuskan bersama dengan sampah isi rumah. Jangan biarkan produk memasuki sistem pembentungan.

· Pembungkusan yang tidak bersih:
  · Syor: Pelupusan mestilah dijalankan menurut peraturan rasmi
  · Agen pencuci yang disyorkan: Air, jika perlu, digunakan bersama dengan agen pencuci.

### 14 Maklumat pengangkutan

· Nombor UN
  · ADR, IMDG, IATA UN1280

· Nama penghantaran UN yang betul
  · ADR 1280 PROPYLENE OXIDE
  · IMDG, IATA PROPYLENE OXIDE

· pengangkutan kelas bahaya
  · ADR, IMDG, IATA

  · Kelas 3 Cecair mudah terbakar.
  · Label 3

· Kumpulan pembungkusan
  · ADR, IMDG, IATA I

· Hazard persekitaran:
  · Bahan cemar marin: Tidak

· Langkah perlindungan khas untuk pengguna
  · Amaran: Cecair mudah terbakar.
  · Kod bahaya (Kemler): 339
  · Nombor EMS: F-E,S-D

· Pengangkutan dalam pukal menurut Lampiran II MARPOL73/78 dan Kod IBC Tidak berkenaan

· Pengangkutan/Maklumat Tambahan:

  · 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
### Exected quantities (EQ)

<table>
<thead>
<tr>
<th>Code: E3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 300 ml</td>
</tr>
</tbody>
</table>

### "Peraturan Model" UN:

UN1280, PROPYLENE OXIDE, 3.1

## 15 Maklumat Pengawalaturan

- Peraturan/undang-undang keselamatan, kesihaan dan persekitaran khusus untuk bahan atau campuran tersebut
- Unsurs label GHS Bahan ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- Piktogram hazard

![Piktogram hazard](https://via.placeholder.com/150)

- Perkataan isyarat Bahaya

- Komponen pelabelan yang menentukan bahaya:
  - propylene oxide
- Pernyataan hazard
  - Cecair dan wap paling mudah terbakar.
  - Memudaratkan jika tertelan.
  - Toksik jika terkena kulit atau tersedut.
  - Menyebabkan kerengsaan kulit.
  - Menyebabkan kerosakan mata yang serius.
  - Boleh menyebabkan kecacatan genetik.
  - Boleh menyebabkan kanser.
  - Boleh menyebabkan kerengsaan pernafasan.
  - Memudarakan kepada hidupan akuatik dengan kesan kekal berpanjangan.

- Pernyataan langkah perlindungan

  **Jauhkan daripada haba/percikan api/nyalaan terbuka/permukaan panas - Dilarang merokok.**

  **JIKA TERKENA KULIT (atau rambut):** Tanggalkan semua pakaian yang tercemar dengan segera. Basuh kulit dengan air/pancuran.

  **JIKA TERKENA MATA:** Bilas berhati-hati dengan air selama beberapa minit. Tanggalkan kanta lekap, jika anda dapat dilakukan dengan mudah. Teruskan membilas.

  Segera hubungi PUSAT RACUN/doktor.

  Simpan di tempat berkunci.

  Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

- Peraturan kebangsaan:

- Maklumat had kegunaan:

  Pekerja tidak dibenarkan terdedah kepada bahan berbahaya ini. Pengecualian boleh dibuat oleh pihak berkuasa dalam kes tertentu.

- Penilaian keselamatan bahan kimia: Penilaian Keselamatan Bahan Kimia belum dilakukan.
Nama dagang: PROPYLENE OXIDE, ACS REAGENT

16 Maklumat lain

Maklumat ini berdasarkan maklumat kami yang terkini. Walau bagaimanapun, ini tidak akan menjadi jaminan bagi apa-apa ciri produk yang khusus dan tidak akan mewujudkan hubungan kontraktual yang sah dari segi undang-undang.

· Singkatan dan akronim:
  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)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Cec. M. Bkr 1: Flammable liquids, Hazard Category 1
  Toks. Akut 4: Acute toxicity, Hazard Category 4
  Toks. Akut 3: Acute toxicity, Hazard Category 3
  Kreng. Kulit 2: Skin corrosion/irritation, Hazard Category 2
  Kros. Mata 1: Serious eye damage/eye irritation, Hazard Category 1
  Muta. 1B: Germ cell mutagenicity, Hazard Category 1B
  Kars. 1B: Carcinogenicity, Hazard Category 1B
  STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
  Akuatik Kronik 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

1.1 Identificador do produto

- Nome comercial: PROPYLENE OXIDE, ACS REAGENT
- Código do produto: 20401, 20411, 20412, 20414
- 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.

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: sgkcek@aol.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.

- GHS06 caveira sobre tibias cruzadas
  Acute Tox. 3 H311 Tóxico em contacto com a pele.
  Acute Tox. 3 H331 Tóxico por inalação.

- GHS08 perigo para a saúde
  Muta. 1B H340 Pode provocar anomalias genéticas.
  Carc. 1B H350 Pode provocar cancro.

- GHS05 corrosão
  Eye Dam. 1 H318 Provoca lesões oculares graves.

(continuação na página 2)
Nome comercial: PROPYLENE OXIDE, ACS REAGENT

Acute Tox. 4  H302  Nocivo por ingestão.
Skin Irrit. 2  H315  Provoca irritação cutânea.
STOT SE 3  H335  Pode provocar irritação das vias respiratórias.

Aquatic Chronic 3  H412  Nocivo para os organismos aquáticos com efeitos duradouros.

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  GHS05  GHS06  GHS08

Palavra-sinal Perigo

Componentes determinantes para os perigos constantes do rótulo:
oxido de propileno

Advertências de perigo
H224  Líquido e vapor extremamente inflamáveis.
H302  Nocivo por ingestão.
H311+H331  Tóxico em contacto com a pele ou por inalação.
H315  Provoca irritação cutânea.
H318  Provoca lesões oculares graves.
H340  Pode provocar anomalias genéticas.
H350  Pode provocar cancro.
H335  Pode provocar irritação das vias respiratórias.
H412  Nocivo para os organismos aquáticos com efeitos duradouros.

Recomendações de prudência
P210  Manter afastado do calor, superfícies quentes, faiscas, chamas abertas e outras fontes de ignição. Não fumar.
P303+P361+P353  SE ENTRAR EM CONTACTO COM A PELE (ou o cabelo): retirar imediatamente toda a roupa contaminada. Enxaguar a pele com água/tomar um duche.
P310  Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS/médico.
P405  Armazenar em local fechado a 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°: 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

**SECÇÃO 4: Primeiros socorros**

- **4.1 Descrição das medidas de primeiros socorros**
  - Indicações gerais:
    - O vestuário contaminado com substâncias perigosas deve ser imediatamente removido.
    - Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.
    - Tirar a protecção respiratória apenas depois de ter sido despido o vestuário contaminado.
    - Em caso de respiração irregular ou paragem da respiração, executar respiração artificial.
  - **Em caso de inalação:**
    - Ar fresco ou entrada de oxigénio; solicitar auxílio 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, e 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.
Nome comercial: PROPYLENE OXIDE, ACS REAGENT

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.
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
Armaçagem:
Requisitos para espaços ou contenedores 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

8.1 Parâmetros de controlo
Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado:

<table>
<thead>
<tr>
<th>Código</th>
<th>Nome</th>
<th>VLE Valor para exposição longa</th>
<th>TRS S</th>
<th>TRS A3</th>
<th>TRS Dissipação de calor</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9</td>
<td>óxido de propileno</td>
<td>2 ppm</td>
<td>S; A3; Irritação ocular</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 a pele.
Evitar o contacto com os olhos e com a pele.
Nome comercial: PROPYLENE OXIDE, ACS REAGENT

- 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.

- 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

SEÇÃO 9: Propriedades físicas e químicas

9.1 Informações sobre propriedades físicas e químicas de base

- Informações gerais
  - Aspecto: Líquido
  - Cor: Incolor
  - Odor: Característico
  - Limiar olfativo: Não classificado.
  - valor pH: Não classificado.

- Mudança do estado
  - Ponto / intervalo de fusão: -111,9 °C
  - Ponto / intervalo de ebulição: 34,3 °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 %
**Ficha de dados de segurança**

**Nome comercial:** PROPYLENE OXIDE, ACS REAGENT

- **Pressão de vapor em 20 °C:** 590 hPa
- **Densidade em 20 °C:** 0,8313 g/cm³
- **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
- **Coeficiente de distribuição (n-octanol/água):** Não classificado.
- **Viscosidade:**
  - Dinâmico: Não classificado.
  - Cinemático: Não classificado.
- **Percentagem de solvente:**
  - Solventes orgânicos: 0,0 %
  - VOC (UE): 0,00 %
- **9.2 Outras informações:** Não existe mais nenhuma informação relevante disponível.

**SEÇÃO 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 reações 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.

**SEÇÃO 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:**
- **Corrosão/irritação cutânea** Irritante para a pele e as mucosas.
- **Lesões oculares graves/irritação ocular** Forte efeito irritante com perigo de lesões oculares graves.
- **Sensibilização respiratória ou cutânea** Não são conhecidos efeitos sensibilizantes.
- **Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)**
  - Muta. 1B, Carc. 1B

**SEÇÃO 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.
Nome comercial: PROPYLENE OXIDE, ACS REAGENT

- 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.

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

- 14.1 Nº UN
  - ADR, IMDG, IATA UN1280
- 14.2 Designação oficial de transporte da ONU
  - ADR
  - IMDG, IATA 1280 ÓXIDO DE PROPILENO
  - PROPYLENE OXIDE
- 14.3 Classes de perigo para efeitos de transporte
  - ADR, IMDG, IATA
    - Classe
    - Rótulo
      - Classe 3 Líquidos inflamáveis
      - Rótulo 3
- 14.4 Tipo de embalagem
  - ADR, IMDG, IATA 1
- 14.5 Perigos para o ambiente:
  - Poluente das águas: Não
- 14.6 Precauções especiais para o utilizador
  - Atenção: Líquidos inflamáveis
  - N° Kemler: 339
  - N° EMS: F-E,S-D
- 14.7 Transporte a granel em conformidade com o anexo II da Convenção Marpol 73/78 e o Código IBC Não aplicável.
Nome comercial: PROPYLENE OXIDE, ACS REAGENT

Transporte/outras informações:

· ADR
  · Quantidades Limitadas (LQ) 0
  · Quantidades exceptuadas (EQ) Código: E3

·Categoria de transporte
· Código de restrição em túneis 1
· IMDG
  · Limited quantities (LQ) 0
  · Excepted quantities (EQ) Code: E3

· UN "Model Regulation": UN1280, ÓXIDO DE PROPILENO, 3, 1

SECÇÃO 15: Informação sobre regulamentação

· 15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente
  · Diretiva 2012/18/UE
  · Substâncias perigosas designadas - ANEXO I A substância não está listada.

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 exceções.
  · outros regulamentos, restrições e decretos que proíbem

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

Nome comercial: PROPYLENE OXIDE, ACS REAGENT

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3</td>
<td>Acute toxicity, Hazard Category 3</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation, Hazard Category 2</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation, Hazard Category 1</td>
</tr>
<tr>
<td>Muta. 1B</td>
<td>Germ cell mutagenicity, Hazard Category 1B</td>
</tr>
<tr>
<td>Carc. 1B</td>
<td>Carcinogenicity, Hazard Category 1B</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity - Single exposure, Hazard Category 3</td>
</tr>
<tr>
<td>Aquatic Chronic 3</td>
<td>Hazardous to the aquatic environment - Chronic Hazard, Category 3</td>
</tr>
</tbody>
</table>
Ficha de datos de seguridad
según 1907/2006/CE, Artículo 31

fecha de impresión 21.09.2015
Revisión: 21.09.2015

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, ACS REAGENT
  · Número del artículo: 20401, 20411, 20412, 20414
  · 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.
· 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: sgkck@aol.com
    www.emsdiasum.com
  · Fabricante/distribuidor:
    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.
  · GHS06 calavera y tibias cruzadas
    Acute Tox. 3 H311 Tóxico en contacto con la piel.
    Acute Tox. 3 H331 Tóxico en caso de inhalación.
  · GHS08 peligro para la salud

( se continúa en página 2 )
Nombre comercial: PROPYLENE OXIDE, ACS REAGENT

Muta. 1B H340 Puede provocar defectos genéticos.
Carc. 1B H350 Puede provocar cáncer.

Eye Dam. 1 H318 Provoca lesiones oculares graves.

Acute Tox. 4 H302 Nocivo en caso de ingestión.
Skin Irrit. 2 H315 Provoca irritación cutánea.
STOT SE 3 H335 Puede irritar las vías respiratorias.

Aquatic Chronic 3 H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

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

Palabra de advertencia Peligro

Componentes peligrosos a indicar en el etiquetaje:
oxido de propileno

Indicaciones de peligro
H224 Líquido y vapores extremadamente inflamables.
H302 Nocivo en caso de ingestión.
H311+H331 Tóxico en contacto con la piel o si se inhala.
H315 Provoca irritación cutánea.
H318 Provoca lesiones oculares graves.
H340 Puede provocar defectos genéticos.
H350 Puede provocar cáncer.
H335 Puede irritar las vías respiratorias.
H412 Nocivo para los organismos acuáticos, con efectos nocivos duraderos.

Consejos de prudencia
P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.
P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/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.
P310 Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.
P405 Guardar bajo llave.
P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.
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
  · 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:
  Quitarse de inmediato toda prenda contaminada con el producto.
  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.
  Antes de quitarse la protección respiratoria, quitarse la ropa contaminada.
  En caso de respiración irregular o apnea (paro respiratorio), hágase la respiración artificial.
· En caso de inhalación del producto:
  Suministrar aire fresco u oxígeno; solicitar ayuda médica.
  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:
  Limpiar los ojos abiertos durante varios minutos con agua corriente y 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:
  CO2, 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.
Ficha de datos de seguridad según 1907/2006/CE, Artículo 31

Fecha de impresión: 21.09.2015
Revisión: 21.09.2015

Nombre comercial: PROPYLENE OXIDE, ACS REAGENT

- 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.

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 almacenamiento 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/m³, 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 la piel.
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.
  Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de substancias 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

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**SECCIÓN 9: Propiedades físicas y químicas**

- **9.1 Información sobre propiedades físicas y químicas básicas**

  - **Datos generales**
    - **Forma:** Líquido
    - **Color:** Incoloro
    - **Olor:** Característico
    - **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:** 34,3 °C

  - **Punto de inflamación:** -37 °C

  - **Inflamabilidad (sólido, gasiforme):** 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.
**Ficha de datos de seguridad**
**según 1907/2006/CE, Artículo 31**

**Nombre comercial:** PROPYLENE OXIDE, ACS REAGENT

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<table>
<thead>
<tr>
<th><strong>Límites de explosión:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior</td>
<td>1,9 Vol %</td>
</tr>
<tr>
<td>Superior</td>
<td>15 Vol %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Presión de vapor a 20 °C:</strong></th>
<th>590 hPa</th>
</tr>
</thead>
</table>

| **Densidad a 20 °C:**         | 0,8313 g/cm³ |
| **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 |
| **Coeficiente de reparto (n-octanol/agua):**       | No determinado. |

<table>
<thead>
<tr>
<th><strong>Viscosidad:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dinámica</td>
<td>No determinado.</td>
</tr>
<tr>
<td>Cinemática</td>
<td>No determinado.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Concentración del disolvente:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Disolventes orgánicos:</td>
<td>0,0 %</td>
</tr>
<tr>
<td>VOC (CE)</td>
<td>0,00 %</td>
</tr>
</tbody>
</table>

| **9.2 Información adicional:** | No existen más datos relevantes disponibles. |

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**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**

<table>
<thead>
<tr>
<th><strong>Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>75-56-9 óxido de propileno</td>
<td></td>
</tr>
<tr>
<td>Oral LD50</td>
<td>380 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>1245 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** Irrita la piel y las mucosas.
- **Lesiones o irritación ocular graves** Produce irritaciones fuertes con el riesgo de perjudicar seriamente los ojos.
- **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
  - Muta. 1B, Carc. 1B

( se continua en página 7 )
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 (autoclasificación): 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.
- **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

- **14.1 Número UN**
  - ADR, IMDG, IATA UN1280
- **14.2 Designación oficial de transporte de las Naciones Unidas**
  - ADR 1280 ÓXIDO DE PROPILENO
  - IMDG, IATA PROPYLENE OXIDE
- **14.3 Clase(s) de peligro para el transporte**
  - ADR, IMDG, IATA

  - **Clase** 3 Líquidos inflamables
  - **Etiqueta** 3
- **14.4 Grupo de embalaje**
  - ADR, IMDG, IATA 1
- **14.5 Peligros para el medio ambiente:**
  - **Contaminante marino:** No
- **14.6 Precauciones particulares para los usuarios**
  - **Número Kemler:** 339
  - **Atención:** Líquidos inflamables

( se continua en página 6 )
Nombre comercial: PROPYLENE OXIDE, ACS REAGENT

SECCIÓN 15: Información reglamentaria

15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla
- Directiva 2012/18/UE
- Sustancias peligrosas nominadas - ANEXO I No contiene la sustancia.

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 contratual.

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
| Flamm. Liq. 1: Flammable liquids, Hazard Category 1 |
| Acute Tox. 4: Acute toxicity, Hazard Category 4 |
| Acute Tox. 3: Acute toxicity, Hazard Category 3 |
| Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2 |
| Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1 |
| 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 |
| Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3 |
1: การระบุสาร / การทำ / และของบริษัท / บริษัทที่เข้าเกี่ยวคู่

1.1 ลักษณะเฉพาะของผลิตภัณฑ์
- ชื่อทางการค้า: PROPYLENE OXIDE, ACS REAGENT
- เลขที่รายชื่อ: 20401, 20411, 20412, 20414
- เลขที่ CAS: 75-56-9
- จำนวน EC: 200-879-2
- เลขที่ EU: 603-055-00-4

1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุให้ใช้และที่ไม่ควรให้ใช้ 
ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
- ผู้ผลิต: Electron Microscopy Sciences
- ผู้จัดหา: Product safety department

1.4 หมายเลขโทรศัพท์ฉุกเฉิน:
- ChemTrec 1-800-424-9300 Contract CCN7661
- 1-703-527-3887

2: การระบุสิ่งที่เป็นอันตราย

2.1 การจัดจำแนกประเภทของสารหรือสารผสม
- การแบ่งประเภทตามข้อกำหนด (อีซี) เลขที่ 1272/2008

- เปลวไฟ
  Flam. Liq. 1 H224 ของเหลวและไอที่ไวไฟสูงสุด

- หัวกระโหลกและกระดูกไขว้
  Acute Tox. 3 H311 มีพิษโดยการสัมผัสกับผิวหนัง
  Acute Tox. 3 H331 มีพิษหากสูดหายใจเข้า

- สิ่งอันตรายต่อสุขภาพ
  Muta. 1B H340 อาจเป็นสาเหตุให้เกิดข้อบกพร่องทางพันธุกรรม
  Carc. 1B H350 อาจเป็นเหตุให้เกิดมะเร็ง

- การกัดกร่อน
  Eye Dam. 1 H318 เป็นสาเหตุให้เกิดอันตรายต่อดวงตาอย่างสาหัส
แผ่นข้อมูลความปลอดภัย
ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2015.09.21
การปรับปรุงใหม่ : 2015.09.21

ชื่อทางการค้า PROPYLENE OXIDE, ACS REAGENT

Acute Tox. 4 H302 เบื้องต้นทารกหรือเด็กน้อยอาจฝัน
Skin Irrit. 2 H315 เบื้องต้นทารกหรือเด็กน้อยอาจฝัน
STOT SE 3 H335 เกิดอาการขัดข้องต่อระบบหายใจ

Aquatic Chronic 3 H412 ให้โทษต่อสิ่งมีชีวิตในน้ำพร้อมผลกระทบระยะยาว

2.2 องค์ประกอบของฉลาก
- ฉลากตามระเบียบ (EC) เลขที่ 1272/2008 สำหรับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP
- ภาพสัญลักษณ์สิ่งที่เป็นอันตราย

- สัญญาณค่า อันตราย
- ส่วนประกอบที่ระบุอันตรายบนฉลาก
- ประกาศการป้องกันระมัดระวังภัย

2.3 อันตรายอื่นๆ
- ผลของ PBT และการประเมิน vPvB
- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้

3: สำเนาประกอบ/ ข้อมูลรายละเอียดของส่วนผสมต่างๆ

- 3.1 คุณลักษณะทางเคมี: สาร
- การระบุเลขที่ CAS
- เลขที่ที่ระบุ
- จำนวน EC: 200-879-2
4: มาตรการการปฐมพยาบาลเบื้องต้น

4.1 ค่าอัตราถี่การปฐมพยาบาล

- ข้อมูลรายละเอียดทั่วไป

โปรดส่งเสริมให้ความปลอดภัยต่อผู้ป่วยที่มีอาการเจ็บป่วย

เมื่อผู้ป่วยมีอาการเจ็บป่วย อยู่ในเวลาที่วันที่...

4.2 ของเสียที่ส่งเสริมที่เกินกว่า 0.25% ของผู้ป่วย

หลังการสัมผัสทางภูมิคุ้มกันหรือผลิตภัณฑ์ที่ซ่อนใน:

- หลอดจากการสับปะรดที่อยู่ในที่มาที่ที่ตัวอยู่ในที่ผ่าน

5: มาตรการการดับเพลิง

5.1 สารที่ใช้ดับเพลิง

สารดับเพลิงที่เหมาะสม:

คาร์บอนไดออกไซด์สเปรย์ผงหรือน้ำดับเพลิงขนาดใหญ่ด้วยการฉีดน้ำหรือโฟมแอลกอฮอล์ที่ทนทาน

5.2 อันตรายที่เกิดจากสารหรือส่วนผสม

ไม่มีข้อมูลที่เกี่ยวข้อง

6: มาตรการลดอุบัติเหตุ

6.1 การป้องกันส่วนบุคคล

อุปกรณ์ป้องกัน:

หมายถึงการป้องกันในส่วนที่ไม่มีอุปกรณ์ป้องกัน

6.2 การป้องกันส่วนบุคคล

ตัวรับสารที่สามารถยึดของเหลวไว้:

ดูตัวรับสารที่สามารถยึดของเหลวไว้ (หัวใจ)

7: การขนถ่ายส่วนบุคคล

ตัวรับสารที่สามารถยึดของเหลว:

ตัวรับสารที่สามารถยึดของเหลวไว้ (หัวใจ)

8: การขนถ่ายส่วนบุคคล

ตัวรับสารที่สามารถยึดของเหลว:

ตัวรับสารที่สามารถยึดของเหลวไว้ (หัวใจ)

9: การขนถ่ายส่วนบุคคล

ตัวรับสารที่สามารถยึดของเหลว:

ตัวรับสารที่สามารถยึดของเหลวไว้ (หัวใจ)

(ต่อหน้า2)

(ต่อหน้า4)
7: การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันส่วนบุคคลสำหรับการจัดการด้านความปลอดภัย
 ทำให้แน่ใจว่าศาสน์ท่านทำงานมีการระบุจากศูนย์/ใต้สิ่งที่ต้องปฏิบัติได้ และเกี่ยวกับคุณสมบัติของอุปกรณ์ที่ต้องใช้.
 ป้องกันการเกิดอันตรายทางสุขภาพ.

- ข้อมูลรายละเอียดเกี่ยวกับการป้องกันอันตรายและการระเบิด
 อย่างที่ได้แจ้งตั้งไว้โดยที่ต้องมีการระบุ.

- ข้อมูลรายละเอียดเกี่ยวกับการจัดเก็บในสถานที่ที่มีจุดเชื่อมต่อมวล
 ทำให้แน่ใจว่าสถานที่ที่ทำงานมีการระบายอากาศ/ไอเสียที่ดี.

- เก็บและป้องกันการเกิดการระเบิด.

- 7.2 เงื่อนไขในการเก็บรักษาอย่างปลอดภัย
 รวมถึงสิ่งที่เข้ากันไม่ได้.

- การจัดเก็บ
 ป้องกันการเกิดการระเบิด.

- 7.3 การระบุถึงการสิ้นสุดการใช้งาน

8: การควบคุมการทิ้งในลักษณะเป็น / การป้องกันภัยสิ่งมนุษย์

- ข้อมูลรายละเอียดเกี่ยวกับการออกแบบสิ่งอันตรายทางเคมี.

- ส่วนผสมพร้อมค่าขอบเขตที่ต้องจดูในสถานที่ปฏิบัติงาน

<table>
<thead>
<tr>
<th>แหล่งข้อมูล</th>
<th>ค่าระบายอากาศ</th>
<th>ค่าระบายสาร</th>
<th>ค่าระบายที่ใช้เป็นหลัก</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL (USA)</td>
<td>240 mg/m³, 100 ppm</td>
<td>REL (USA)</td>
<td>See Pocket Guide App. A</td>
</tr>
<tr>
<td>REL (USA)</td>
<td>See Pocket Guide App. A</td>
<td>TLV (USA)</td>
<td>4.8 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>DSEN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ข้อมูลรายละเอียดเสริม รายการถูกต้องระหว่างที่จัดทำโดยอาสาสมัครการใช้งานเป็นหลัก.

- 8.2 การควบคุมการสัมผัส
 ผู้ป่วยที่ป้องกันภัยสิ่งมนุษย์

- มำตรการป้องกันภัยสิ่งมนุษย์:
 ทำการควบคุมการสัมผัสที่ต้องเก็บที่ต้องใช้.
 หลีกเลี่ยงการสัมผัสกับมือ.
 กำหนดการสัมผัสถูกตาและผิวหนัง.
 มาตรการการป้องกันภัยสิ่งมนุษย์.

- การป้องกันสสารมันทราย:
 ได้รับการป้องกันสิ่งมันทรายในศูนย์การเรียนรู้และความทันสมัย.

- การป้องกันสิ่งมันทราย:
 ได้รับการป้องกันสิ่งมันทรายในศูนย์การเรียนรู้และความทันสมัย.

(ต่อจากหน้า 3)
# ชื่อทางการค้า

**PROPYLENE OXIDE, ACS REAGENT**

(ต่อที่หน้า 4)

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## 9: คุณสมบัติทางกายภาพและเคมี

<table>
<thead>
<tr>
<th>คุณสมบัติทางกายภาพและเคมี</th>
<th>คุณสมบัติทางกายภาพและเคมี</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9.1 ข้อมูลคุณสมบัติทางกายภาพและเคมี</strong></td>
<td><strong>9.1 ข้อมูลคุณสมบัติทางกายภาพและเคมี</strong></td>
</tr>
<tr>
<td><strong>ข้อมูลรายละเอียดทั่วไป</strong></td>
<td><strong>ข้อมูลรายละเอียดทั่วไป</strong></td>
</tr>
<tr>
<td><strong>สี</strong></td>
<td>สี</td>
</tr>
<tr>
<td>ของเหลว</td>
<td>สี</td>
</tr>
<tr>
<td>ไม่มีสี</td>
<td>ไม่มีสี</td>
</tr>
<tr>
<td><strong>กลิ่น</strong></td>
<td>กลิ่น</td>
</tr>
<tr>
<td>ลักษณะพิเศษ</td>
<td>ลักษณะพิเศษ</td>
</tr>
<tr>
<td>ไม่ได้กำหนดไว้</td>
<td>ไม่ได้กำหนดไว้</td>
</tr>
<tr>
<td><strong>ค่า pH</strong></td>
<td>ค่า pH</td>
</tr>
<tr>
<td>ไม่ได้กำหนดไว้</td>
<td>ไม่ได้กำหนดไว้</td>
</tr>
<tr>
<td><strong>การเปลี่ยนสภาวะ</strong></td>
<td><strong>การเปลี่ยนสภาวะ</strong></td>
</tr>
<tr>
<td>จุดหลอมเหลว/ขอบเขตการหลอมละลาย</td>
<td>จุดเดือด/ขอบเขตการเดือด</td>
</tr>
<tr>
<td>-111.9 °C</td>
<td>34.3 °C</td>
</tr>
<tr>
<td><strong>จุดความไส</strong></td>
<td><strong>จุดความไส</strong></td>
</tr>
<tr>
<td>-37 °C</td>
<td>-37 °C</td>
</tr>
<tr>
<td><strong>ความสามารถติดไฟ</strong> (ของแข็งแก่ส)</td>
<td><strong>ความสามารถติดไฟ</strong> (ของแข็งแก่ส)</td>
</tr>
<tr>
<td>ไม่สามารถใช้ได้</td>
<td>ไม่สามารถใช้ได้</td>
</tr>
<tr>
<td><strong>อุณหภูมิจุดระเบิด</strong></td>
<td><strong>อุณหภูมิจุดระเบิด</strong></td>
</tr>
<tr>
<td>430 °C</td>
<td>430 °C</td>
</tr>
<tr>
<td><strong>อุณหภูมิสลายตัว</strong></td>
<td><strong>อุณหภูมิสลายตัว</strong></td>
</tr>
<tr>
<td>ไม่ได้กำหนดไว้</td>
<td>ไม่ได้กำหนดไว้</td>
</tr>
<tr>
<td><strong>การเผาไหม้ด้วยตัวเอง</strong></td>
<td><strong>การเผาไหม้ด้วยตัวเอง</strong></td>
</tr>
<tr>
<td>ไม่ได้กำหนดไว้</td>
<td>ไม่ได้กำหนดไว้</td>
</tr>
<tr>
<td><strong>อันตรายจากการระเบิด</strong></td>
<td><strong>อันตรายจากการระเบิด</strong></td>
</tr>
<tr>
<td>ผลิตภัณฑ์ไม่ได้เป็นสารระเบิดอย่างไรก็ตามอาจเป็นไปได้</td>
<td>ผลิตภัณฑ์ไม่ได้เป็นสารระเบิดอย่างไรก็ตามอาจเป็นไปได้</td>
</tr>
<tr>
<td><strong>ข้อมูลการระเบิด</strong></td>
<td><strong>ข้อมูลการระเบิด</strong></td>
</tr>
<tr>
<td>ซึ่งต่า</td>
<td>ซึ่งต่า</td>
</tr>
<tr>
<td>1.9 Vol %</td>
<td>15 Vol %</td>
</tr>
<tr>
<td><strong>ความดันไอ</strong> ที่ 20 °C</td>
<td><strong>ความดันไอ</strong> ที่ 20 °C</td>
</tr>
<tr>
<td>590 hPa</td>
<td>590 hPa</td>
</tr>
<tr>
<td><strong>ความหนาแน่น</strong> ที่ 20 °C</td>
<td><strong>ความหนาแน่น</strong> ที่ 20 °C</td>
</tr>
<tr>
<td>0.8313 g/cm³</td>
<td>0.8313 g/cm³</td>
</tr>
</tbody>
</table>

(ต่อที่หน้า 6)
แห่งข้อมูลความปลอดภัย ตาม 1907/2006/EC, มาตรา 31

ชื่อทางการค้า: PROPYLENE OXIDE, ACS REAGENT

- ความนามะแหน่งแผลพื้นที่: ไม่ได้กำหนดไว้.
- ความนามะแหน่งขาวจอย: ไม่ได้กำหนดไว้.
- อัตราการระเหย: ไม่ได้กำหนดไว้.
- ความสภาวะอยู่ในการละลายใน / ความสภาวะผสมเป็นสส
  ละลายเนื้อเดียวทุกส่วนผสมกับ ละลายเนื้อเดียวทุกส่วนผสมกับ น้ำที่ 20°C 405 g/l
- ลิมิตเหลวการแยกด้วยตัว\(\text{สิ่งไม่ออกมานะ}\) ไม่ได้กำหนดไว้.
- ความหนาแน่น:\(\text{ไม่มีผลผลิตต่าง}\) ไม่ได้กำหนดไว้.
- ปริมาณส่วนประกอบตัวที่ทำละลาย:\(\text{ด้วยการละลายอินทรีย์}\) 0.0 %
- \(\text{VOC (EC)}\) 0.00 %
- 9.2 ข้อมูลเสี่ยงฯ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

10: ความเสี่ยงและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาใดตอบ
- 10.2 เสี่ยงภัยทางเพศ
  การสลายตัวด้วยความร้อน/ เสี่ยงที่ต่อสุทธิเสีย ไม่มีการสลายตัวด้วยความร้อนและเสียที่ระบุไว
  ความเป็นไปได้:\(\text{การสลายตัวผ่านปฏิกิริยาอื่นๆ}\) ไม่มีปฏิกิริยาอื่นๆที่ให้ผล
  เสี่ยงอันตราย:\(\text{การสลายตัวผ่านปฏิกิริยาอื่นๆ}\) ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
  วัสดุที่เข้ากันได้:\(\text{ไม่มีผลผลิตต่างภายใต้การสืบพันธุ}\) ไม่มีสารมากุณภัยสุทธิที่ให้ผล
  ปฏิกิริยาตอบ:\(\text{ไม่มีผลผลิตต่างภายใต้การสืบพันธุ}\) ไม่มีสารมากุณภัยสุทธิที่ให้ผล
- 10.6 ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา: ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

11: ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา
  ความเป็นพิษของสภาวะต่างๆ:
  การจัดแบ่งตามค่า LD/LC50
  75-56-9 propylene oxide
  หา living \(\text{LD50}\) 380 mg/kg (rat)
  หาดิริตริท \(\text{LD50}\) 1245 mg/kg (rabbit)
- อาการภัยพิษของเสี่ยงสูง
  นานที่อยู่ใน:\(\text{ไม่ใช่รังนกพันธุ์}\) ทำให้ร่างกายต้องเดินดินหนึ่งและมีสภาวะใจช่องจมูกและปากที่แข็งแกร่งมีก้นหลักสูง
  ที่สูงราชการ: ระดับเดินดินสมบรูณ์หรือเก็บถังยาสำหรับสิ่งมีชีวิตที่มีก้นหลักเดือดระดับที่ต่ำ
  แพทย์ที่อยู่:\(\text{ไม่มีร่างกายของระดับ}\) ไม่มีวิธีการรักษา
  ผลการทดลอง CMR (การทำให้เกิดมะเร็งการผ่าตัดและการผ่าตัดและการผ่าตัด
  Muta. 1B, Carc. 1B

12: ข้อมูลรายละเอียดเกี่ยวกับโมเลกุลวิทยา

12.1 ความเป็นพิษ
  ความเป็นพิษที่เกี่ยวกับ:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  ความเสี่ยงต่อการผ่าตัด:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  การส่งผลต่อการผ่าตัด:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  การเปลี่ยนแปลงในดิน:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  ความเป็นพิษ:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  ความเป็นไปได้:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  ปฏิกิริยาต่อ:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
  ปฏิกิริยาตอบ:\(\text{ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้}\)
### ข้อหาการค้า PROPYLENE OXIDE, ACS REAGENT

- ข้อมูลรายละเอียดเกี่ยวกับอันตรายที่ต้องทราบ
  - หมายเหตุทั่วไป: ไม่มีข้อมูลที่เกี่ยวกับนิเวศวิทยา

#### 13: การจัดการการกำจัด

- 13.1 วิธีการกำจัดของเสีย
  - คำแนะนำ: ต้องไม่ทิ้งไปพร้อมกับน้ำหรือระบบน้ำเสียที่จะเป็นอันตรายต่อสิ่งแวดล้อม

#### 14: ข้อมูลรายละเอียดในการขนส่ง

<table>
<thead>
<tr>
<th>14.1 เลขที่ UN</th>
<th>ADR, IMDG, IATA</th>
<th>UN1280</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2 ชื่อการจัดส่งสินค้าที่เหมาะสมของ UN</td>
<td>ADR, IMDG, IATA</td>
<td>1280 PROPYLENE OXIDE</td>
</tr>
<tr>
<td>14.3 ชั้นเรียนอันตรายจากการขนส่ง</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>14.4 กลุ่มของสารเหลว</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>14.5 กลุ่มของการขนส่ง</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>14.6 การป้องกันไฟฟ้าสถิต</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>14.7 การขนส่งขนาดใหญ่ตามภาคผนวก</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
</tbody>
</table>

- 14.4 กลุ่มของสารเหลว
- 14.5 กลุ่มของการขนส่ง
- 14.6 การป้องกันไฟฟ้าสถิต
- 14.7 การขนส่งขนาดใหญ่ตามภาคผนวก

#### 11.2 ผลข้างเคียงอื่นๆ

- ไม่มีข้อมูลที่เกี่ยวข้อง

#### 11.3 การพิจารณาการกำจัด

- 11.3.1 วิธีการกำจัดของเสีย
- 11.3.2 คำเตือน: ไม่สามารถใช้ได้

#### 11.4 ผลข้างเคียงอื่นๆ

- ไม่มีข้อมูลที่เกี่ยวข้อง

#### 11.5 การขนส่งขนาดใหญ่ตามภาคผนวก

- ไม่สามารถใช้ได้
ชื่อทางการค้า: PROPYLENE OXIDE, ACS REAGENT

<table>
<thead>
<tr>
<th>การขนส่ง/ข้อมูลฉลอมฉลอม</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
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<td>ป้ายหมายเหตุจำกัด (LQ)</td>
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<tr>
<td>ตัวเลขยกเว้น (EQ)</td>
<td>Code: E3</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td>Maximum net quantity per outer packaging: 300 ml</td>
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<td>หมวดหมู่การขนส่ง</td>
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<tr>
<td>ข้อผูกพันการขนส่ง</td>
<td>D/E</td>
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<tr>
<td>IMDG</td>
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<tr>
<td>ป้ายหมายเหตุจำกัด (LQ)</td>
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</tr>
<tr>
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<td>Code: E3</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td>Maximum net quantity per outer packaging: 300 ml</td>
<td></td>
</tr>
<tr>
<td>“กฎหมายควบคุม”ของ UN</td>
<td>UN1280, PROPYLENE OXIDE, 3, I</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15: ข้อมูลรายละเอียดของกฎหมาย

15.1 ความปลอดภัย ศุภภาพและมั่นคง/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม

15.2 การประเมินความปลอดภัยของสารเคมี:

16: ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดนี้ใช้คุณความรู้จับบันของเจ้าหน้าที่หลักหรือกฎหมายให้ตามข้อมูลนี้ไม่ใช้การรับผู้ที่จะเข้าสู่สิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสมและไม่สามารถยืนยันการย้ายไปตามกฎหมายที่เกี่ยวข้องกับกฎหมาย

ค่าของและชื่อของที่ผสมชื่อ
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
Acute Tox. 3: Acute toxicity, Hazard Category 3
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
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
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3
1 Nhận biết các chất hoặc hồn hợp và các doanh nghiệp

- Phân loại sản phẩm
- Tên giao dịch: PROPYLENE OXIDE, ACS REAGENT
- Mã giao dịch: 20401, 20411, 20412, 20414
- Mã CAS: 75-56-9
- Số EC: 200-879-2
- Mã hiện thị: 603-055-00-4
- Các trường hợp được dùng chất, hồn hợp này và các trường hợp chống chỉ định
  Không có thêm thông tin liên quan.
- Hướng dẫn sử dụng: Phòng thí nghiệm hóa chất
- Thông tin chi tiết của các nhà cung cấp các bảng dữ liệu an toàn
- Nhà sản xuất / Nhà phân phối: Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkcck@aol.com
  www.emsdiasum.com
- Các thông tin chi tiết có thể tìm thấy ở: Product safety department
- Số điện thoại khẩn cấp: ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 Xác định các trường hợp nguy hiểm có thể xảy ra

- Phân loại chất và hồn hợp
  - Cháy flame
  - Chất lòng đố cháy 1 H224 Chất lòng và hơi rất dễ cháy.
  - Đáy lầu xưởng chéo
  - Nhiễm độc cấp tính 3 H311 Độc hại khi tiếp xúc với da.
  - Nhiễm độc cấp tính 3 H331 Độc hại nếu hít phải.
  - Hải sục khoe
    Muta. 1B H340 Có thể gây dị tật di truyền.
    Carc. 1B H350 Có thể gây ung thư.
  - Ăn mòn
    Có hại cho mắt 1. H318 Gây thiếu hài nghiêm trọng cho mắt.

(Xem tiếp ở trang 2)
Tên giao dịch: PROPYLENE OXIDE, ACS REAGENT

(Ngày in 2015.09.21)

Dữ liệu an toàn
Theo điều 1907/2006/EC, khoản 31

Ngày in 2015.09.21
Sửa lại: 2015.09.21

3 Thành phần / Thông tin của công thức

· Mô tả tính chất hóa học: Chất
· Mô tả mã CAS: 75-56-9 propylene oxide
· Mã nhận biết: Sơn EC: 200-879-2

Nhiễm độc cấp tính 4 H302 Có hại nếu nuốt phải
Kích ưng da 2 H315 Gây kích ưng da.

Aquatic Acute 3 H402 Có hại đối với môi trường nước.
Aquatic Chronic 3 H412 Có hại đối với môi trường nước do tác động lâu dài.

· Các phần tử nhận biết
· Các yếu tố trên nhãn GHS Chất này được xếp loại và ghi nhận theo quy định của GHS
· Các hình biểu thị sự nguy hiểm

GHS02 GHS05 GHS06 GHS08

· Tử chì đầu hiệu Nguy hiểm
· Các thành phần nguy hiểm và việc ghi nhận: propylene oxide
· Các hướng dẫn và các nguy hiểm
Chất lỏng và hơi rất dễ cháy.
Có hại nếu nuốt phải
Độc hại nếu tiếp xúc với da hoặc hit phải.
Gây kích ưng da.
Gây thiệt hại nghiêm trọng cho mắt.
Có thể gây dị tật di truyền.
Có thể gây ung thư.
Có hại đối với môi trường nước do tác động lâu dài.

· Các hướng dẫn an toàn
Tránh nhiệt/tia lửa/ngọn lửa/bằng mặt nóng – Không hút thuốc.
NẾU ĐỊNH MẤT: Rửa thật cẩn thận với nước trong vài phút. Tháo kính áp tròng nếu có và nếu dễ làm.
Sau đó tiếp tục rửa
Gọi ngay trung tâm giải độc/ bắc się
Niề cài giữ được khóa lại
Vứt sản phẩm/vỏ hộp theo quy định của địa phương/khu vực/quốc gia/quốc tế.
· Các dấu hiệu nguy hiểm khác:
· Kết quả cuối đánh giá PBT và vPvB Results
· PBT: Không được áp dụng
· vPvB: Không được áp dụng
Tên giao dịch: PROPYLENE OXIDE, ACS REAGENT

- Mã hiện thị: 603-055-00-4
- SVHC
- 75-56-9 propylene oxide

4 Các biện pháp sơ cứu

- Mở tã và các biện pháp sơ cứu
- Hướng dẫn chung:
  Ngày lập tức loại bỏ quần áo bị vụy bẩn bởi sản phẩm
  Triệu chứng nhiễm độc có thể xuất hiện sau một vài giờ, nên những quan sát y tế cần phải được kéo dài ít nhất 48 giờ sau tai nạn.
  Chỉ được tháo thiết bị hô hấp sau khi quần áo bảo hộ được cơ bì hoặc toàn toàn.
  Trong trường hợp thở không đều hoặc ngừng hô hấp, phải hô hấp nhân tạo.
- Sau khi hít vào:
  Cung cấp không khí trong lành hoặc oxy, gọi bác sĩ.
  Trong trường hợp người bệnh bất tỉnh giữ bệnh nhân ở vị trí nằm nghiêng và chuyển đi.
- Sau khi tiếp xúc với da: Rửa ngay và thật sạch với nước và xà phòng.
- Sau khi tiếp xúc với mắt: Nhẹ nhàng rửa mắt trong vài phút với nước, sau đó xin tư vấn của bác sĩ.
- Sau khi num phát: Gọi cho bác sĩ ngay.
- Thông tin đánh cho bác sĩ:
  Những triệu chứng và tác dụng cấp và chậm quan trọng nhất:
  Không có thông tin liên quan nào khác.
  Các chỉ dẫn về sự giúp đỡ tức thời của bác sĩ và trợ giúp đặc biệt:
  Không có thêm thông tin liên quan.

5 Các giải pháp chữa cháy

- Các phương tiện chữa cháy
- Các giải pháp chữa cháy thích hợp:
  CO2, bọt hay phun bụi nước. Chữa đám cháy lớn hơn phải phun bụi nước hay bot ARC.
- Những nguy cơ gây cháy từ các chất hoặc hỗn hợp:
  Không có thêm thông tin liên quan.
- Hướng dẫn trong trường hợp chữa cháy:
- Các thiết bị bảo vệ:
  Mắt phải phòng độc.

6 Các biện pháp trong trường hợp gas phong bất ngờ

- Các biện pháp phòng ngừa cá nhân, thiết bị bảo hộ và thủ tục khe khắt cáp:
  Đeo thiết bị bảo vệ. Những ai không có thiết bị bảo vệ không được vào khu vực nguy hiểm.
- Các biện pháp bảo vệ môi trường:
  Làm loãng đi bằng nhiều nước.
  Ngăn không cho tràn vào hệ thống nước thoát, nước mắt hay nước ngầm.
- Các phương pháp và nguyên liệu dùng cho việc ngăn chặn và làm sạch:
  Có thể ngâm vào vật liệu giùm chất lỏng (cát, diatomite, uva axít, vua thuống, mún cựa).
  Loại bỏ vật liệu bị ô nhiễm theo quy định về chatá tài tại mức 13
  Đảm bảo thoáng khí.
- Liên hệ đến các phần khác:
  Xem phần 7 để biết thông tin về xử lý an toàn.
  Xem phần 8 để biết thông tin về thiết bị bảo hộ cá nhân.

(Xem tiếp ở trang 2)
(Xem tiếp ở trang 4)

8 Kiểm soát các tình huống nguy hiểm / Bảo vệ cá nhân

- Thông tin thêm và thiết kế các phương tiện kỹ thuật: Không có thêm dữ liệu; xem mục 7. Các thông số điều kiện.

- Các thành phần với giá trị giới hạn cần được yêu cầu giám sát tại nơi làm việc:

<table>
<thead>
<tr>
<th>75-56-9 propylene oxide</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL (USA)</td>
<td>Giá trị đại hạn: 240 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>REL (USA)</td>
<td>See Pocket Guide App. A</td>
</tr>
<tr>
<td>TLV (USA)</td>
<td>Giá trị đại hạn: 4.8 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>DSEN</td>
<td></td>
</tr>
</tbody>
</table>

- Thông tin bổ sung: Danh sách có hiệu lực trong suốt quá trình thực hiện được sử dụng làm cơ sở

- Kiểm soát các tình huống nguy hiểm

- Các thiết bị an toàn cá nhân

- Các biện pháp bảo vệ và vệ sinh tổng thể:

- Tránh xa các phương tiện, đồ uống và đồ ăn cho vật nuôi.
- Loại bỏ nguy tác tục tì cản quan áo bị nhiễm bàn
- Rửa tay trước giờ ăn và cuối giờ làm.
- Đè rieng quan áo bảo hộ.
- Tránh tiếp xúc với da.
- Tránh tiếp xúc với mắt và da.

- Bảo vệ đường hô hấp:

- Trong trường hợp tiếp xúc ít hoặc ở ngoài môi độ chấp nhận sử dụng mặt nạ phòng độc. Trong trường hợp tiếp xúc nhiều và trong thời gian lâu thì phải sử dụng bình thở oxy.

(Xem tiếp ở trang 5)
Tên giao dịch: PROPYLENE OXIDE, ACS REAGENT

- **Bảo vệ tay**

  Găng tay bảo hộ

  Chất liệu là găng phải chống thấm đối với sản phẩm/chất chế phẩm
  Do không thể các cuộc thử nghiệm nên không có khuyến cáo về chất liệu làm găng tay cho sản phẩm/chất chế phẩm/hơn hợp hóa chất
  Chọn chất liệu găng theo số lần và thời gian sử dụng

- **Chất liệu của găng tay**

  Việc lựa chọn găng tay phù hợp không chỉ phụ thuộc vào chất liệu, mà còn về nhận hiểu hơn và chất lượng và rất đa dạng về nhà sản xuất

- **Thời gian xâm nhập của găng tay vật liệu**

  Việc pha chế chính xác qua thời gian đã được phát hiện bởi các nhà sản xuất găng tay bảo vệ và phải được giám sát

- **Bảo vệ mắt Eye**

  Kính bảo hộ dán kin

#### 9 Tính chất vật lý và hóa học

- **Thông tin về tình chất vật lý và hóa học cơ bản**
  - **Diện mạo:**
    - Hình thức: Chất lỏng
    - Màu: Không màu
    - Mùi: Đặc điểm
    - Nước bền mùi: Không xác định.
  - **Đọ pH:** Không xác định.
  - **Thay đổi trong điều kiện:**
    - Điểm tan / Phạm vi tan: -111.9 °C
    - Điểm sôi / Phạm vi sôi: 34.3 °C
  - **Điểm bay hơi:** -37 °C
  - **Tính dễ cháy (rắn, khí):** Không thể áp dụng.
  - **Niệt độ cháy:** 430 °C
  - **Niệt độ phân hủy:** Không xác định.
  - **Tự cháy:** Không xác định.
  - **Nguy hiểm do cháy nổ:** Sản phẩm không nổ. Nhưng có khả năng hình thành khí, hơn hợp hóa gây nổ.

- **Giới hạn nổ:**
  - Dưới: 1.9 Vol %
  - Trên: 15 Vol %

- **Áp lực hơi:** tại 20 °C: 590 hPa

- **Mật độ tại 20 °C:** 0.8313 g/cm³
Tên giao dịch: PROPYLENE OXIDE, ACS REAGENT

(Xem tiếp ở trang 5)

- Mật độ tương đối: Không xác định.
- Mật độ của hai: Không xác định.
- Tính bay hơi: Không xác định.

- Đỡ hòa tan trong / Đỡ hòa trong với: Không xác định.
  - Nước tại 20 °C: 405 g/l

- Sự phân biệt hỗ sự (n-octanol / Nước): Không xác định.
- Độ nhớt:
  - Dung môi hữu cơ: 0.0 %
  - VOC (EC): 0.00 %
- Thông tin khác: Không có thông tin chi tiết tương ứng

10 Sự ổn định và phản ứng:
- Phản ứng:
- Sự ổn định hóa học:
- Phản hóa нет / Điều kiện cần tránh: Không phản hóa nếu được sử dụng theo tiêu chuẩn.
- Khả năng phản ứng nguy hiểm: Chưa có phản ứng nguy hiểm nào được biết.
- Các điều kiện cần tránh: Không có thêm thông tin liên quan
- Mất liệu không lường thich: Không có thêm thông tin liên quan.
- Sản phẩm phản ứng nguy hiểm: Chưa có sản phẩm phản huyết nào được biết đến.

11 Thông tin độc tính:
- Thông tin về các hiệu ứng độc tính:
- Ngoài cấp tính:
- Phân loại liên quan tới gia trị LD/LC50
  75-56-9 propylene oxide
  - Miệng LD50 380 mg/kg (rat)
  - Da LD50 1245 mg/kg (rabbit)
- Hiệu ứng kích thích cấp:
  - Trên da: Kích ứng da và lớp màng nhạy niêm mạc.
  - Trên mắt: Kích ứng mắt với nguy cơ tổn thương mắt nghiêm trọng.
  - Độ nguy cảm: Không có tác dụng mạnh cảm nào được biết.
- Hiệu ứng CMR (Gây ung thư, gây biến dị, sinh sản độc tính)
  Muta. 1B, Carc. 1B

12 Thông tin sinh thái
- Độc tính
- Thức ăn độc tính: Không có thêm thông tin liên quan.
- Sự kết hợp và khả năng het đản: Không có thêm thông tin liên quan.
- Hành vi trong các hệ thống môi trường:
- Tính năng tích lũy sinh học: Không có thêm thông tin liên quan.
- Tính lưu động trong đất: Không có thêm thông tin liên quan.
Dự liệu an toàn
Theo điều 1907/2006/EC, khoản 31
Ngày in 2015.09.21
Sửa lại: 2015.09.21

Tên giao dịch PROPYLENE OXIDE, ACS REAGENT

- **Để sung thông tin sinh thái:**
- **Ghi chú tổng quát:**
  - Đọc hai cho nước loại 3 (quy định của Đức) (Tự đánh giá): rút đọc hai cho nước.
  - Không để sản phẩm tiếp xúc với nước nghiêm, nguồn nước hoặc hệ thống nước thái, kẻ cà với số lượng nhỏ.
  - Đọc hai với nước ưng kế cà với số lượng cực kỳ nhỏ thêm vào đất.
- **Kết quả đánh giá PBT và vPvB**
  - PBT: Không có khả năng ử dụng.
  - vPvB: Không có khả năng ử dùng.
- **Các hiệu ứng bất lợi** Không có thêm thông tin liên quan.

13 Xem xét xử lý

- **Phương pháp xử lý chất thải**
- **Khuyến nghị**
  - Không được xử lý cùng rác thải sinh hoạt. Không được bỏ sản phẩm vào hệ thống nước thái.
- **Bao bì**
  - **Khuyến nghị**: Việc xử lý phải thực hiện theo các quy định của chính quy.</p>
- **Các chất tẩy rửa được khuyến nghị sử dụng** Nước, nước canh, kết hợp với chất tẩy rửa.

14 Thông tin vận chuyển

- **Mã LHQ (UN)**
  - ADR, IMDG, IATA UN1280
- **Tên vận chuyển theo quy ước của LHQ**
  - **ADR**
  - **IMDG, IATA**
  - PROPYLENE OXIDE
- **Vận chuyển các loại hợp nguy hiểm**
  - **ADR, IMDG, IATA**
- **Lạp**
  - **Nhăn** 3 Các chất lỏng dễ cháy.
- **Nhóm bao bi**
  - **ADR, IMDG, IATA**
  - 1
- **Các môi trường nguy hiểm:**
  - **O nhiễm biến:** Không
- **Các biện pháp phòng ngừa đặc biệt cho người sử dụng:**
  - Cảnh báo: Các chất lỏng dễ cháy.
  - **Mã nguy hiểm:** 339
  - **Mã EMS:** F-E,S-D
- **Vận chuyển với số lượng lớn theo Phụ Lục II của MARPOL73/78 và mã IBC**
  - Không có khả năng ử dụng.
Tên giao dịch PROPYLENE OXIDE, ACS REAGENT

- Văn chuyen/ Thông tin thêm:
  - ADR
  - Số lượng giới hạn (LQ): 0
    - Code: E3
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 300 ml
  - Danh mục văn chuyen: 1
    - Mã hạn chế dừng hạn: D/E
  - IMDG
    - Limited quantities (LQ): 0
    - Code: E3
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 300 ml
  - Mã chuẩn của LHQ: UN1280, PROPYLENE OXIDE, 3, I

15 Thông tin quy định:

- An toàn, sức khỏe và các quy định, pháp luật về môi trường cho các chất và hỗ hợp
  - Kho hóa chất và chất hóa học của Philippin
    - Chất được liệt kê.
  - Kho chất hóa học của Australia
    - Chất được liệt kê.
  - Lập kế hoạch cho thuốc và chất độc theo mẫu chuẩn
    - 75-56-9 propylene oxide S7
  - Các yêu tố trên nhãn GHS
  - Các hình cảnh báo nguy hiểm Hazard pictograms
    - GHS02 GHS05 GHS06 GHS08

- Từ tin hiệu
  - Tiêu thụ
  - Các thành phần xác định nguy hiểm của nhãn hiệu propylene oxide
  - Cảnh báo nguy hiểm
    - Chất lỏng và hơi rất dễ cháy.
    - Có hại nếu nuốt phải
    - Độc hại nếu tiếp xúc với da hoặc hút phải.
    - Gây kích ức da.
    - Gây thiệt hại nghiêm trọng cho mắt.
    - Có thể gây dị tật di truyền.
    - Có thể gây ung thư.
    - Có hại đối với môi trường nước do tác dụng lâu dài.
  - Cảnh báo phòng ngừa
    - Tránh nhiệt/tia lửa/ông lửa/bể mặt nóng – Không hút thuốc.

(Xem tiếp ở trang 9)
Đồng nghĩa an toàn
Theo điều 1907/2006/EC, khoán 31

Tên giao dịch PROPYLENE OXIDE, ACS REAGENT

Nếu tiếp xúc trên da (hoặc tóc): ngay lập tức cói bỏ tất cả quần áo nhiễm độc. Rửa bằng nước/vôi hoa sen

ĐỀ DỊNH MẤT: Rửa thật căn thận với nước trong vài phút. Tháo kính áp tròng nếu có và nếu để làm.
Sau đó tiếp tục rửa
Gội ngay trung tâm giải độc/ bác sĩ
Nơi cắt giữ được khóa lại
Vứt sản phẩm/vỏ hộp theo quy định của địa phương/khu vực/quốc gia/quốc tế.

· Quy định quốc gia

· Thông tin về hạn sử dụng
Các công nhân không được phép tiếp xúc với vật liệu nguy hiểm này. Trong những trường hợp nhất định, các nhà sản xuất có thể đưa ra những ngoại lệ.

· Đánh giá an toàn hóa chất: Đánh giá an toàn hóa chất chưa được tiến hành.

16 Thông tin khác
Thông tin này dựa trên kiến thức hiện nay của chúng tôi. Tuy nhiên, điều này không đảm bảo cho bất cứ tình chất cụ thể nào của sản phẩm và không thiết lập mối quan hệ hợp tác có giá trị pháp lý nào.

· Chữ viết tắt hoặc Viết tắt chữ cái đầu:
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
Chất lỏng dễ cháy 1: Flammable liquids, Hazard Category 1
Niêm đốc cấp tính 4: Acute toxicity, Hazard Category 4
Niêm đốc cấp tính 3: Acute toxicity, Hazard Category 3
Kích ứ ng da 2: Skin corrosion/irritation, Hazard Category 2
Cố hại cho mắt 1.: Serious eye damage/eye irritation, Hazard Category 1
Muta. 1B: Germ cell mutagenicity, Hazard Category 1B
Carc. 1B: Carcinogenicity, Hazard Category 1B
Aquatic Acute 3: Hazardous to the aquatic environment - Acute Hazard, Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3