PROPYLENE OXIDE
CAS NO 75-56-9

SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1 Product identifiers
   Product name : Propylene Oxide
   CAS-No. : 75-56-9
1.2 Relevant identified uses of the substance or mixture and uses advised against
   Identified uses : Laboratory chemicals, Industrial & for professional use only.
1.3 Details of the supplier of the safety data sheet
   Company : Central Drug House (P) Ltd
             7/28 Vardaan House
             New Delhi -110002
             INDIA
   Telephone : +91 11 49404040
   Email : care@cdhfinechemical.com
1.4 Emergency telephone number
   Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification
2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Flammable liquids (Category 1), H224
   Acute toxicity, Oral (Category 4), H302
   Acute toxicity, Inhalation (Category 3), H331
   Acute toxicity, Dermal (Category 4), H312
   Skin irritation (Category 2), H315
   Eye irritation (Category 2), H319
   Germ cell mutagenicity (Category 1B), H340
   Carcinogenicity (Category 1B), H350
   Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
   Labelling according Regulation (EC) No 1272/2008
   Pictogram
   Signal word : Danger
   Hazard statement(s)
   H224 : Extremely flammable liquid and vapour.
H302 + H312  Harmful if swallowed or in contact with skin
H315      Causes skin irritation.
H319      Causes serious eye irritation.
H331      Toxic if inhaled.
H335      May cause respiratory irritation.
H340      May cause genetic defects.
H350      May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry powder or dry sand to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.

Supplemental Hazard Statements

Restricted to professional users.

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients
3.1 Substances
Synonyms: (±)-Methyloxirane  1,2-Epoxypropane

Formula: C₃H₆O
Molecular weight: 58.08 g/mol
CAS-No.: 75-56-9
EC-No.: 200-879-2
Index-No.: 603-055-00-4

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component                               Classification                        Concentration
Methyloxirane Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)
CAS-No.  75-56-9                         Flam. Liq. 1; Acute Tox. 4;                 <= 100 %
EC-No.   200-879-2                        Acute Tox. 3; Acute Tox. 4;
Index-No. 603-055-00-4                   Skin Irrit. 2; Eye Irrit. 2; Muta.
                                      1B; Carc. 1B; STOT SE 3;
                                      H224, H302, H332, H331,
                                      H312, H315, H319, H340,
                                      H350, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures
4.1 Description of first aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Over time, pressure may increase causing containers to burst. Handle and open container with care. Heat sensitive. Cool to 0°C before opening.
Storage class (TRGS 510): Flammable liquids
7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engine protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
a) Appearance Form: clear, liquid
   Colour: colourless
b) Odour ether-like
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: -112 °C - lit.
f) Initial boiling point and boiling range 34 °C - lit.
g) Flash point -37 °C - closed cup
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits
   Upper explosion limit: 38.8 %(V)
   Lower explosion limit: 2.1 %(V)
k) Vapour pressure 444.1 mmHg at 20 °C
   1,521.5 mmHg at 55 °C
l) Vapour density 2.01 - (Air = 1.0)
m) Relative density 0.83 g/mL at 25 °C
n) Water solubility 405 g/l at 20 °C - soluble
o) Partition coefficient: n-octanol/water log Pow: 0.03
p) Auto-ignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity 0.374 mm2/s at 20 °C -
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
Relative vapour density 2.01 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents, Copper, Strong acids, Strong bases, Peroxides, Bases, Amines

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 380 mg/kg(Methylxirane)
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - 950 mg/kg(Methylxirane)

Skin corrosion/irritation Skin -
Rabbit(Methylxirane) Result: Severe skin irritation - 6 h

Serious eye damage/eye irritation
Eyes -
Rabbit(Methylxirane)
Result: Severe eye irritation

Respiratory or skin sensitisation
Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects. (Methylroxirane)
In vivo tests showed mutagenic effects (Methylroxirane)

Carcinogenicity
This product is or contains a component that has been reported to be proba EPA classification. (Methylroxirane)
Possible human carcinogen (Methylroxirane)
IARC: 2B - Group 2B: Possibly carcinogenic to humans (Methylroxirane)

Reproductive toxicity
No toxicity to reproduction (Methylroxirane)

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation. (Methylroxirane)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available (Methylroxirane)

Additional Information
RTECS: TZ2975000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea (Methylroxirane)

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 52 mg/l - 96 h (Methylroxirane)
Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 350 mg/l - 48 h (Methylroxirane)
(EPA-660/3-75-009)
Toxicity to algae EC50 - Pseudokirchneriella subcapitata - 240 mg/l - 96 h (Methylroxirane)
Toxicity to bacteria NOEC - Bacteria - 100 mg/l - 28 d (Methylroxirane)

12.2 Persistence and degradability
Biodegradability Result: 89 % - Readily biodegradable.

12.3 Bioaccumulative potential
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

12.4 Mobility in soil
No data available (Methylroxirane)

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Harmful to aquatic life.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 1280
IMDG: 1280
IATA: 1280

14.2 UN proper shipping name
ADR/RID: PROPYLENE OXIDE
IMDG: PROPYLENE OXIDE
IATA: Propylene oxide

14.3 Transport hazard class(es)
ADR/RID: 3
IMDG: 3
IATA: 3

14.4 Packaging group
ADR/RID: I
IMDG: I
IATA: I

14.5 Environmental hazards
ADR/RID: no
IMDG Marine pollutant: no
IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

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

H224 Extremely flammable liquid and vapour.
H302 Harmful if swallowed.
H302 + H312 Harmful if swallowed or in contact with skin
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H340 May cause genetic defects. H350
May cause cancer.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.