

# PROPYLENE OXIDE

0192

March 1995

CAS No: 75-56-9  
 RTECS No: TZ2975000  
 UN No: 1280  
 EC No: 603-055-00-4

1,2-Epoxypropane  
 Methyloxirane  
 Methyl ethylene oxide  
 Propene oxide  
 $\text{CH}_3\text{CHCH}_2\text{O} / \text{C}_3\text{H}_6\text{O}$   
 Molecular mass: 58.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Extremely flammable. Heating will cause rise in pressure with risk of bursting.	NO open flames, NO sparks, and NO smoking.	Powder, alcohol-resistant foam, water spray, carbon dioxide.
<b>EXPLOSION</b>	Vapour/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools.	In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.

EXPOSURE		STRICT HYGIENE!	
<b>Inhalation</b>	Cough. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest.
<b>Skin</b>	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
<b>Eyes</b>	Redness. Pain.	Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Personal protection: complete protective clothing including self-contained breathing apparatus.	F+ Symbol T Symbol R: 45-46-12-20/21/22-36/37/38 S: 53-45 Note: E UN Hazard Class: 3 UN Pack Group: I Unbreakable packaging; put breakable packaging into closed unbreakable container.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-30S1280 or 30GF1-I+II NFPA Code: H2; F4; R2	Fireproof. Separated from acids, bases, oxidants. Cool.

### IMPORTANT DATA

**Physical State; Appearance**

VERY VOLATILE COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.

**Physical dangers**

The vapour is heavier than air and may travel along the ground; distant ignition possible.

**Chemical dangers**

The substance may polymerize violently under the influence of bases, acids and metal chlorides with fire or explosion hazard. Reacts violently with chlorine, ammonia, strong oxidants, acids causing fire and explosion hazard.

**Occupational exposure limits**

TLV: 2 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); SEN; (ACGIH 2004).  
MAK: skin absorption (H); Carcinogen category: 2; (DFG 2004).

**Routes of exposure**

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

**Inhalation risk**

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20/C.

**Effects of short-term exposure**

The substance is irritating to the eyes, the skin and the respiratory tract.

**Effects of long-term or repeated exposure**

Repeated or prolonged contact may cause skin sensitization. This substance is possibly carcinogenic to humans.

### PHYSICAL PROPERTIES

Boiling point: 34/C  
Melting point: -104/C  
Relative density (water = 1): 0.8  
Solubility in water, g/100 ml at 20/C: 40.5  
Vapour pressure, kPa at 20/C: 59  
Relative vapour density (air = 1): 2.0

Relative density of the vapour/air-mixture at 20/C (air = 1): 1.6  
Flash point: -37/C c.c.  
Auto-ignition temperature: 449/C  
Explosive limits, vol% in air: 2-38.5  
Octanol/water partition coefficient as log Pow: 0.03

### ENVIRONMENTAL DATA

### NOTES

No odour warning if toxic concentrations are present.  
Card has been partly updated in October 2005. See sections Occupational Exposure Limits, EU classification, Emergency Response.

### ADDITIONAL INFORMATION

**LEGAL NOTICE**

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information