

SIGMA-ALDRICH**Material Safety Data Sheet**Version 3.1
Revision Date 01/09/2009
Print Date 07/19/2010**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : (±)-Propylene oxide

Product Number : 56671
Brand : Fluka

Company : Sigma-Aldrich
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SAINT LOUIS MO 63103
USA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : (±)-Methyloxirane
1,2-Epoxypropane

Formula : C₃H₆O
Molecular Weight : 58.08 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Methyloxirane			
75-56-9	200-879-2	603-055-00-4	-

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Carcinogen, Target Organ Effect, Toxic by ingestion, Harmful by skin absorption., Corrosive, Mutagen

Target Organs

Central nervous system

HMIS Classification**Health Hazard:** 3**Chronic Health Hazard:** ***Flammability:** 4**Physical hazards:** 0**NFPA Rating****Health Hazard:** 3**Fire:** 4**Reactivity Hazard:** 0

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed. Causes burns.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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. Consult a physician.

In case of eye contact

Continue rinsing eyes during transport to hospital. 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.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point -37 °C (-35 °F) - closed cup

Ignition temperature 748 °C (1,378 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, 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.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid exposure - obtain special instructions before use. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

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. Store in cool place.

Over time, pressure may increase causing containers to burst Handle and open container with care. Heat sensitive. Cool to 0°C before opening.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Methyloxirane	75-56-9	TWA	2 ppm	1996-05-18	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Confirmed animal carcinogen with unknown relevance to humans. Sensitiser Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL. 1996 Adoption Refers to Appendix A -- Carcinogens. Substance identified by other sources as a suspected or confirmed human carcinogen.				
		TWA	20 ppm 50 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	100 ppm 240 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of 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).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form clear, liquid

Colour colourless

Safety data

pH no data available

Melting point -112 °C (-170 °F)

Boiling point 34 °C (93 °F)

Flash point -37 °C (-35 °F) - closed cup

Ignition temperature 748 °C (1,378 °F)

Lower explosion limit 2.1 %(V)

Upper explosion limit 37 %(V)

Vapour pressure 592.1 hPa (444.1 mmHg) at 20 °C (68 °F)
2,028.5 hPa (1,521.5 mmHg) at 55 °C (131 °F)

Density 0.83 g/mL at 25 °C (77 °F)

Water solubility no data available

Relative vapour density 2.01
- (Air = 1.0)

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Oxidizing agents, Copper, Strong acids, Strong bases, Peroxides, Bases, Amines

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 380 mg/kg

Remarks: Behavioral:Excitement. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory stimulation.

LD50 Dermal - rabbit - 1,244 mg/kg

Irritation and corrosion

Skin - rabbit - Severe skin irritation - 6 h

Eyes - rabbit - Severe eye irritation

Sensitisation

no data available

Chronic exposure

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

IARC: Group 2B - Possibly carcinogenic to humans (Methyloxirane)

NTP: NTP reasonably anticipated to be carcinogenic (Methyloxirane)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Laboratory experiments have shown mutagenic effects.

Signs and Symptoms of Exposure

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

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	Harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	Toxic if swallowed. Causes burns.
Target Organs	Central nervous system,

Additional Information

RTECS: TZ2975000

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

no data available

Ecotoxicity effects

Toxicity to fish LC50 - Carassius auratus (goldfish) - 170 mg/l - 24 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 1280 Class: 3 Packing group: I

Proper shipping name: Propylene oxide

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN-Number: 1280 Class: 3 Packing group: I EMS-No: F-E, S-D

Proper shipping name: PROPYLENE OXIDE

Marine pollutant: No

IATA

UN-Number: 1280 Class: 3 Packing group: I

Proper shipping name: Propylene oxide

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Carcinogen, Target Organ Effect, Toxic by ingestion, Harmful by skin absorption., Corrosive, Mutagen

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

Methyloxirane

CAS-No.
75-56-9

Revision Date
1991-07-01

SARA 313 Components

Methyloxirane

CAS-No.
75-56-9

Revision Date
1991-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Methyloxirane

CAS-No.
75-56-9

Revision Date
1991-07-01

Pennsylvania Right To Know Components

Methyloxirane

CAS-No.
75-56-9

Revision Date
1991-07-01

New Jersey Right To Know Components

Methyloxirane

CAS-No.
75-56-9

Revision Date
1991-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known in the State of California to cause cancer.

CAS-No.
75-56-9

Revision Date
1988-10-01

Methyloxirane

16. OTHER INFORMATION

Further information

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