

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : (S)-(-)-Propylene oxide
Product Number : 540021
Brand : Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +18003255832
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2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable liquid, Target Organ Effect, Carcinogen, Mutagen

Target Organs

Central nervous system

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H224 Extremely flammable liquid and vapour.
H302 + H312 Harmful if swallowed or in contact with skin.
H332 Harmful if inhaled.
H350 May cause cancer.

Precautionary statement(s)

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 Wear protective gloves/protective clothing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.

HMIS Classification

Health hazard: 0
Chronic Health Hazard: *
Flammability: 4
Physical hazards: 0

NFPA Rating

Health hazard: 0
Fire: 4
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

Formula : C₃H₆O
Molecular Weight : 58.08 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
(S)-1,2-Epoxypropane			
16088-62-3	240-241-0	-	-

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

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

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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 and materials for containment and 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

Precautions for safe handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking.

Conditions for safe 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.

Refrigerate before opening.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

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

Face shield and 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	33 - 34 °C (91 - 93 °F) - lit.
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	0.829 g/cm ³ at 20 °C (68 °F)
Water solubility	no data available
Relative vapour density	2.01 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat.
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

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

Laboratory experiments have shown mutagenic effects.

Genotoxicity in vitro - Hamster - Lungs

Sister chromatid exchange

Carcinogenicity

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.

Possible human carcinogen

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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

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

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.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)

no data available

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion

May be harmful if swallowed.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

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

Additional Information

RTECS: UJ2651000

12. ECOLOGICAL INFORMATION

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

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, Target Organ Effect, Carcinogen, Mutagen

DSL Status

This product contains the following components that are not on the Canadian DSL nor NDSL lists.

(S)-1,2-Epoxypropane	CAS-No. 16088-62-3
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SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
(S)-1,2-Epoxypropane	16088-62-3	

New Jersey Right To Know Components

	CAS-No.	Revision Date
(S)-1,2-Epoxypropane	16088-62-3	

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information

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