

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/07/2022

Reviewed on 12/07/2022

1 Identification

- **Product identifier**
- **Trade name:** Propylene oxide
- **Article number:** 33715
- **CAS Number:**
75-56-9
- **EC number:**
200-879-2
- **Index number:**
603-055-00-4
- **Application of the substance / the mixture:** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de
- **Information department:** Product Safety department Tel.: +49 6221 13840-35
- **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)

SERVA
serving scientists

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02

Flammable Liquids 1

H224 Extremely flammable liquid and vapor.



GHS06

Acute Toxicity - Dermal 3

H311 Toxic in contact with skin.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08

Germ Cell Mutagenicity 1B

H340 May cause genetic defects.

Carcinogenicity 1B

H350 May cause cancer.



GHS07

Acute Toxicity - Oral 4

H302 Harmful if swallowed.

Eye Irritation 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

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- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:** GHS02, GHS06, GHS07, GHS08

- **Signal word:** Danger

- **Hazard statements:**

Extremely flammable liquid and vapor.

Harmful if swallowed.

Toxic in contact with skin or if inhaled.

Causes serious eye irritation.

May cause genetic defects.

May cause cancer.

May cause respiratory irritation.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center if you feel unwell.

If on skin: Wash with plenty of soap and water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 4

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 4

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment:**

· **PBT:** PBT - assessment not available.

· **vPvB:** vPvB - assessment not available.

*

3 Composition/information on ingredients

- **Chemical characterization: Substances**

- **CAS No. Description:**

75-56-9 Methyloxirane

- **Identification number(s):**

· **EC number:** 200-879-2

· **Index number:** 603-055-00-4

- **Description:**

· **Empirical formula:** C₃H₆O

· **MW:** 58.1

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4 First-aid measures

- **Description of first aid measures**

- **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

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- **After inhalation:** Provide fresh air. Call for doctor immediately.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.
- **After eye contact:**
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.
- **After swallowing:**
Wash out mouth. Call a doctor immediately.
Do not induce vomiting!
- **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**
Formation of dangerous gases or vapours is possible in case of fire.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Keep away from ignition sources
Ensure adequate ventilation
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 73 ppm
- **PAC-2:** 290 ppm
- **PAC-3:** 870 ppm
- **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

- **Precautions for safe handling:** Avoid contact with eyes and skin.
- **Information about protection against explosions and fires:**
Fumes can combine with air to form an explosive mixture.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.

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- **Further information about storage conditions:**
Store receptacle in a well ventilated area.
Keep receptacle tightly sealed and store in dry conditions.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Storage class:** 3 flammable liquids
- **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

75-56-9 Methyloxirane (80-100%)

PEL	Long-term value: 240 mg/m ³ , 100 ppm
REL	See Pocket Guide App. A
TLV	Long-term value: 2 ppm DSEN, A3

- **Additional information:**
resorbable by skin contact
The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Additional information about design of technical systems:** No further data; see item 7.
- **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 eyes and skin.
- **Breathing equipment:**
Short term filter device:
Filter AX
- **Protection of hands:**
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.
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Neoprene gloves
- **Not suitable are gloves made of the following materials:** Butyl rubber, BR
- **Eye protection:** Tightly sealed goggles
- **Body protection:** Protective work clothing

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9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information:

· Color:	Colorless
· Odor:	Ether-like
· Odor threshold:	Not determined.
· Melting point/Melting range:	-112 °C (-169.6 °F)
· Boiling point/Boiling range:	34 °C (93.2 °F)
· Flammability (solid, gaseous):	Extremely flammable liquid and vapour.
· Explosion limits:	
· Lower:	2.1 Vol %
· Upper:	45 Vol %
· Flash point:	-37 °C (-34.6 °F)
· Ignition temperature:	no information available
· Decomposition temperature:	no information available
· pH-value:	no information available
· Viscosity:	
· Kinematic viscosity:	no information available
· Dynamic viscosity at 20 °C (68 °F):	0.32 mPas
· Solubility in / Miscibility with:	
· Water at 20 °C (68 °F):	405 g/l
· Partition coefficient (n-octanol/water):	no information available
· Vapor pressure at 20 °C (68 °F):	590 hPa (442.5 mm Hg)
· Density at 20 °C (68 °F):	0.83 g/cm ³ (6.92635 lbs/gal)
· Relative density:	no information available

· Other information

· Appearance:

· Form: Liquid

· Important information on protection of health and environment, and on safety:

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Molecular weight: 58.1 g/mol

10 Stability and reactivity

· Reactivity: No further relevant information available.

· Chemical stability:

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· Possibility of hazardous reactions: Vapours can form flammable and explosive mixtures with air.

· Conditions to avoid: Avoid high temperatures, flames, sparks

· Incompatible materials: Avoid contact with: strong oxidizers, strong acids, strong alkali

· Hazardous decomposition products: In case of fire: See Section 5

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

Harmful if swallowed.

Toxic in contact with skin or if inhaled.

· LD/LC50 values that are relevant for classification:

Oral	LD50	380 mg/kg (rat)
Dermal	LD50	>1,245 mg/kg (rbt)

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Inhalative	LC50/4h	9.95 mg/l (rat)
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- **on the eye:** Causes serious eye irritation.
- **Germ cell mutagenicity:** May cause genetic defects.
- **Carcinogenicity:** May cause cancer.
- **Specific target organ toxicity - single exposure:** May cause respiratory irritation.
- **Other information (about experimental toxicology)**
The classification of Methyloxirane [Propylene oxide] as carcinogen Carc. 1B (H350 "May cause cancer") and mutagen Muta. 1B (H340 "May cause genetic defects") according to Regulation (EC) No 1272/2008 (CLP Regulation) and the inclusion in Annex VI, part 3, Table 3.1 (list of harmonised classification and labelling of hazardous substances) shows: Methyloxirane [Propylene oxide] meets the criteria for classification as carcinogenic and mutagenic in accordance with Article 57(a) and 57 (b) of REACH. (ECHA SVHC Support Document - Methyloxirane [Propylene oxide])
- **Additional toxicological information:**
After inhalation: mucous membran irritation, cough, dispnoea, sickness, dysentery, amentia
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 2B**
- **NTP (National Toxicology Program) 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.
- **Other information:** 12 - 14 % in 28 d
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Results of PBT and vPvB assessment:**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects:**
- **Remark:**
EC50 / 96 h (Algae): 240 mg/l
EC10 / 17h (Bacteria): 10mg/l (DIN 38412 part 8)
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 3 (Assessment by list): extremely hazardous for water

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must be specially treated adhering to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· UN-Number	UN1280
· DOT, ADR, IMDG, IATA	
· UN proper shipping name	Propylene oxide
· DOT	1280 PROPYLENE OXIDE
· ADR	PROPYLENE OXIDE
· IMDG, IATA	
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG, IATA	
	
· Class:	3 Flammable liquids
· Label:	3
· Packing group	I
· DOT, ADR, IMDG, IATA	
· Environmental hazards	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	33
· EMS Number:	F-E,S-D
· Stowage Category	E
· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· 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 "Model Regulation":	UN 1280 PROPYLENE OXIDE, 3, I

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.

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- **Section 355 (extremely hazardous substances):** Substance is listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is listed.
- **Proposition 65** Substance is not listed.
- **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.
- **Carcinogen categories**
- **EPA (Environmental Protection Agency) B2**
- **TLV (Threshold Limit Value) 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, GHS06, GHS07, GHS08
- **Signal word** Danger
- **Hazard statements**
Extremely flammable liquid and vapor.
Harmful if swallowed.
Toxic in contact with skin or if inhaled.
Causes serious eye irritation.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.
- **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center if you feel unwell.
If on skin: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
- **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.

- **Department issuing SDS:** Product safety department
- **Contact:** +49 6221 13840-35
- **Date of preparation / last revision** 12/07/2022
- **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
NOAEC: No observed adverse effect level (concentration)
bw: body weight
ADR: Accord relatif au transport international 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
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)

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*HMIS: Hazardous Materials Identification System (USA)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Flammable Liquids 1: Flammable liquids – Category 1**Acute Toxicity - Oral 4: Acute toxicity – Category 4**Acute Toxicity - Dermal 3: Acute toxicity – Category 3**Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A**Germ Cell Mutagenicity 1B: Germ cell mutagenicity – Category 1B**Carcinogenicity 1B: Carcinogenicity – Category 1B**Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3*

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