Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

*
SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: Propylene oxide**
· **Synonyma**
Methyloxirane
1,2-Epoxypropane

· **Article number:** 33715
· **CAS Number:**
75-56-9
· **EC number:**
200-879-2
· **Index number:**
603-055-00-4
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture:** Laboratory chemicals

· **1.3 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
· **1.4 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)

*
SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008:**


GHS02

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.


GHS06

Acute Tox. 3 H311 Toxic in contact with skin.
Acute Tox. 3 H331 Toxic if inhaled.


GHS08

Muta. 1B H340 May cause genetic defects.
Carc. 1B H350 May cause cancer.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 1)

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

· ***2.2 Label elements***
· ***Labelling according to Regulation (EC) No 1272/2008:***
The substance is classified and labelled according to the GB CLP regulation.
· ***Hazard pictograms:*** *GHS02, GHS06, GHS08*
· ***Signal word:*** *Danger*
· ***Hazard statements:***
H224 Extremely flammable liquid and vapour.
H302 Harmful if swallowed.
H311+H331 Toxic in contact with skin or if inhaled.
H319 Causes serious eye irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H335 May cause respiratory irritation.
· ***Precautionary statements***
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/hearing protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
· ***Labelling of packages where the contents do not exceed 125 ml***
· ***Hazard pictograms*** *GHS02, GHS06, GHS08*
· ***Signal word*** *Danger*
· ***Hazard statements***
H224 Extremely flammable liquid and vapour.
H311+H331 Toxic in contact with skin or if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
· ***Precautionary statements***
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
· ***2.3 Other hazards***
· ***Results of PBT and vPvB assessment:***
· ***PBT:*** *PBT - assessment not available.*
· ***vPvB:*** *vPvB - assessment not available.*

*
SECTION 3: Composition/information on ingredients

· ***3.1 Substances***
· ***CAS No. Description:***
75-56-9 Methyloxirane

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 2)

· ***Identification number(s):***
· ***EC number:*** *200-879-2*
· ***Index number:*** *603-055-00-4*
· ***Description:***
· ***Empirical formula:*** C_3H_6O
· ***MW:*** *58.1*

· ***SVHC***	
75-56-9	*Methyloxirane*

*
SECTION 4: First aid measures

· ***4.1 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.
· ***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!
· ***4.2 Most important symptoms and effects, both acute and delayed***
No further relevant information available.
· ***4.3 Indication of any immediate medical attention and special treatment needed***
No further relevant information available.

*
SECTION 5: Firefighting measures

· ***5.1 Extinguishing media***
· ***Suitable extinguishing agents:***
CO_2*, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
· ***5.2 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 formed, but not limited to:
Carbon monoxide and carbon dioxide
· ***5.3 Advice for firefighters***
· ***Protective equipment:*** *Wear self-contained respiratory protective device.*
· ***Additional information*** *Cool endangered receptacles with water spray.*

*
SECTION 6: Accidental release measures

· ***6.1 Personal precautions, protective equipment and emergency procedures***
Wear protective clothing.
Keep away from ignition sources
Ensure adequate ventilation
· ***6.2 Environmental precautions:*** *Do not allow to enter sewers/ surface or ground water.*
· ***6.3 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).
· ***6.4 Reference to other sections***
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 3)

See Section 13 for disposal information.

*
SECTION 7: Handling and storage

· **7.1 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.

· **7.2 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 oxidising agents.
· **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
· **7.3 Specific end use(s):** No further relevant information available.

*
SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
75-56-9 Methyloxirane (80-100%)	
WEL	Long-term value: 2.4 mg/m³, 1 ppm Carc

· **Additional information:**
resorbable by skin contact
The lists that were valid during the creation were used as basis.

· **8.2 Exposure controls**
· **Appropriate engineering controls:** No further data; see item 7.
· **Individual protection measures, such as 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.
· **Hand protection:**
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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 4)

· ***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/face protection:*** *Tightly sealed goggles.*
· ***Body protection:*** *Protective work clothing.*

*
SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information:**	
· **Physical state:**	*Fluid*
· **Colour:**	*Colourless*
· **Odour:**	*Ether-like*
· **Odour threshold:**	*Not determined.*
· **Melting point/freezing point:**	*-112 °C*
· **Boiling point or initial boiling point and boiling range:**	*34 °C*
· **Flammability:**	*Extremely flammable liquid and vapour.*
· **Lower and upper explosion limit:**	
· **Lower:**	*2.1 Vol %*
· **Upper:**	*45 Vol %*
· **Flash point:**	*-37 °C*
· **Ignition temperature:**	*no information available*
· **Decomposition temperature:**	*no information available*
· **pH:**	*no information available*
· **Viscosity:**	
· **Kinematic viscosity:**	*no information available*
· **Dynamic viscosity at 20 °C:**	*0.32 mPas*
· **Solubility:**	
· **Water at 20 °C:**	*405 g/l*
· **Partition coefficient n-octanol/water (log value):**	*no information available*
· **Vapour pressure at 20 °C:**	*590 hPa*
· **Density and/or relative density:**	
· **Density at 20 °C:**	*0.83 g/cm³*
· **Relative density:**	*no information available*

· **9.2 Other information**	
· **Appearance:**	
· **Form:**	*Liquid*
· **Important information on protection of health and environment, and on safety:**	
· **Explosive properties:**	*Product is not explosive. However, formation of explosive air/vapour mixtures are possible.*
· **Molecular weight**	*58.1 g/mol*

*
SECTION 10: Stability and reactivity

· **10.1 Reactivity:** *No further relevant information available.*
· **10.2 Chemical stability:**
· **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
· **10.3 Possibility of hazardous reactions:** *Vapours can form flammable and explosive mixtures with air.*
· **10.4 Conditions to avoid:** *Avoid high temperatures, flames, sparks*
· **10.5 Incompatible materials:** *Avoid contact with: strong oxidizers, strong acids, strong alcali*

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 5)

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

*
SECTION 11: Toxicological information

· ***11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:***
· ***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)*
Inhalative	*LC50/4h*	*9.95 mg/l (rat)*

· ***Skin corrosion/irritation:*** *Based on available data, the classification criteria are not met.*
· ***Serious eye damage/irritation:*** *Causes serious eye irritation.*
· ***Respiratory or skin sensitisation:*** *Based on available data, the classification criteria are not met.*
· ***Germ cell mutagenicity:*** *May cause genetic defects.*
· ***Carcinogenicity:*** *May cause cancer.*
· ***Reproductive toxicity:*** *Based on available data, the classification criteria are not met.*
· ***STOT-single exposure:*** *May cause respiratory irritation.*
· ***STOT-repeated exposure:*** *Based on available data, the classification criteria are not met.*
· ***Aspiration hazard:*** *Based on available data, the classification criteria are not met.*
· ***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 (GB 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 UK REACH. (ECHA SVHC Support Document - Methyloxirane [Propylene oxide])
· ***Additional toxicological information:***
After inhalation: mucous membran irritation, cough, dispnoea, sickness, dysentery, amentia
· ***11.2 Information on other hazards:***
· ***Endocrine disrupting properties:*** *Substance is not listed.*

*
SECTION 12: Ecological information

· ***12.1 Toxicity:***
· ***Aquatic toxicity:*** *No further relevant information available.*
· ***12.2 Persistence and degradability:*** *No further relevant information available.*
· ***Other information:*** *12 - 14 % in 28 d*
· ***12.3 Bioaccumulative potential:*** *No further relevant information available.*
· ***12.4 Mobility in soil:*** *No further relevant information available.*
· ***12.5 Results of PBT and vPvB assessment:***
· ***PBT:*** *PBT - assessment not available.*
· ***vPvB:*** *vPvB - assessment not available.*
· ***12.6 Endocrine disrupting properties:*** *For information on endocrine disrupting properties see section 11.*
· ***12.7 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 danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water.

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 6)

*
SECTION 13: Disposal considerations

· **13.1 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.*

*
SECTION 14: Transport information

· **14.1 UN number or ID number**	
· **ADR, IMDG, IATA**	*UN1280*
· **14.2 UN proper shipping name**	
· **ADR**	*1280 PROPYLENE OXIDE*
· **IMDG, IATA**	*PROPYLENE OXIDE*
· **14.3 Transport hazard class(es)**	
· **ADR, IMDG, IATA**	
· **Class:**	*3 Flammable liquids.*
· **Label:**	*3*
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	*I*
· **14.5 Environmental hazards**	
· **Marine pollutant:**	*No*
· **14.6 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.*
· **14.7 Maritime transport in bulk according to IMO instruments**	*Not applicable.*
· **Transport/Additional information:**	
· **ADR**	
· **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*
· **Transport category**	*1*
· **Tunnel restriction code**	*D/E*
· **IMDG**	
· **Limited quantities (LQ)**	*0*

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 7)

· ***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*

*
SECTION 15: Regulatory information

· ***15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***

· ***Directive 2012/18/EU***
· ***Named dangerous substances - ANNEX I*** *Substance is listed.*
· ***Qualifying quantity (tonnes) for the application of lower-tier requirements*** *5 t*
· ***Qualifying quantity (tonnes) for the application of upper-tier requirements*** *50 t*
· ***REGULATION (EC) No 1907/2006 ANNEX XVII*** *Conditions of restriction: 3, 28, 29, 40*
· ***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***
Substance is not listed.
· ***REGULATION (EU) 2019/1148***
· ***Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***
Substance is not listed.
· ***Annex II - REPORTABLE EXPLOSIVES PRECURSORS*** *Substance is not listed.*
· ***Regulation (EC) No 273/2004 on drug precursors*** *Substance is not listed.*
· ***Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors***
Substance is not listed.

· ***National regulations:***

· ***Technical instructions (air):***

Class	Share in %
III	*80-100*

· ***Water hazard class:*** *Water danger class 3 (Assessment by list): extremely hazardous for water.*

· ***Substances of very high concern (SVHC) according to UK REACH***	
75-56-9	*Methyloxirane*

· ***15.2 Chemical safety assessment:*** *A Chemical Safety Assessment has not been carried out.*

SECTION 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 previous version:*** *16.02.2022*
· ***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 (UK REACH)
vPvB: very persistent, very bioaccumulative substance (UK REACH)
UK REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
GB 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

(Contd. on page 9)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 07.12.2022 *Version number 6* *Revision: 07.12.2022*

Trade name: Propylene oxide

(Contd. of page 8)

IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 1: Flammable liquids – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 3: Acute toxicity – Category 3
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Muta. 1B: Germ cell mutagenicity – Category 1B
Carc. 1B: Carcinogenicity – Category 1B
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3