

Safety Data Sheet

acc. to OSHA HCS

Printing date 07/26/2024

Reviewed on 07/26/2024

1 Identification

- **Product identifier**
- **Trade name:** β -Propiolactone
- **Article number:** 33672
- **CAS Number:**
57-57-8
- **EC number:**
200-340-1
- **Index number:**
606-031-00-1
- **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:**
Emergency medical information in case of poisoning
Poison Information Center Mainz-Tel: +49 (0) 6131 19240
(Advice in German and English)

SERVA
■ serving scientists ■

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06

Acute Toxicity - Inhalation 2 H330 Fatal if inhaled.



GHS08

Carcinogenicity 1B H350 May cause cancer.



GHS07

Skin Irritation 2 H315 Causes skin irritation.

Eye Irritation 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:** GHS06, GHS07, GHS08
- **Signal word:** Danger
- **Hazard statements:**
Fatal if inhaled.
Causes skin irritation.
Causes serious eye irritation.

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May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

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

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.

If eye irritation persists: Get medical advice/attention.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 2

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3

Fire = 2

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:**

57-57-8 1,3-propiolactone

· **Identification number(s):**

· **EC number:** 200-340-1

· **Index number:** 606-031-00-1

· **Description:**

· **Empirical formula:** $C_3H_4O_2$

· **MW:** 72.1

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Remove breathing apparatus only after contaminated clothing have been completely removed.

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. Consult a doctor immediately.

· **After skin contact:**

Wash off immediately with plenty of soap and water; rinse thoroughly; seek medical attention.

· **After eye contact:**

Rinse opened eye for several minutes with running water. Remove existing contact lenses, if possible, and continue rinsing. Consult an ophthalmologist immediately.

· **After swallowing:** Rinse out mouth. Call a doctor immediately.

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **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**
In case of fire, development of irritating or toxic vapors and gases possible.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear a respirator with filter A/P3 immediately.
Wear protective clothing.
Ensure adequate ventilation
Avoid contact with eyes and skin.
- **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 section 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 1.5 ppm
- **PAC-2:** 5 ppm
- **PAC-3:** 30 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:**
Work only in fume cabinet.
Avoid contact with eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in unopened original receptacles.
Storage temperature: -15 to -25 °C
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**
Store under lock and key and with access restricted to technical experts or their assistants only.
Store container tightly closed and dry.

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· **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:**

57-57-8 1,3-propiolactone (80-100%)

PEL *see 29 CFR 1910.1003*

REL *See Pocket Guide App. A*

TLV *Long-term value: 0.5 ppm*

A3

· **Additional information:** 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 section 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 A/P3

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Protective gloves

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:**

Rubber gloves

Neoprene gloves

· **Eye protection:** *Tightly sealed goggles*

· **Body protection:** *Protective work clothing*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information:**

· **Color:**

Colorless

· **Odor:**

Pungent

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

-33 °C (-27.4 °F)

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· Boiling point/Boiling range:	<i>not applicable (decomposition)</i>
· Flammability (solid, gaseous):	<i>Based on available data, the classification criteria for flammable liquids are not met.</i>
· Explosion limits:	
· Lower:	2.9 Vol %
· Upper:	No information available
· Flash point:	74 °C (165.2 °F)
· Decomposition temperature:	155 °C (311 °F)
· pH-value:	No information available
· Viscosity:	
· Kinematic viscosity:	No information available
· Dynamic viscosity:	No information available
· Solubility in / Miscibility with:	
· Water:	370 g/l (hydrolysis)
· Partition coefficient (n-octanol/water):	No information available
· Vapor pressure at 20 °C (68 °F):	3 hPa (2.3 mm Hg)
· Vapor pressure at 50 °C (122 °F):	12 hPa (9 mm Hg)
· Density:	No information available
· Relative density:	No information available
· Other information	<i>Further physicochemical data are not available.</i>
· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety:	
· Danger of explosion:	<i>Not determined.</i>
· Molecular weight	72.1 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:** *No further relevant information available.*
- **Conditions to avoid:**
Avoid contact with moisture and water.
The product hydrolyzes completely in water.
warming
- **Incompatible materials:** *Avoid contact with strong oxidizing agents, strong acids, strong alkalis.*
- **Hazardous decomposition products:** *In case of fire: see section 5*
- **Additional information:** *Danger of polymerisation at room temperature*

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** *Fatal if inhaled.*
- **on the skin:** *Causes skin irritation.*
- **on the eye:** *Causes serious eye irritation.*
- **Carcinogenicity:** *May cause cancer.*
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 2B**
- **NTP (National Toxicology Program) R**

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· OSHA-Ca (Occupational Safety & Health Administration) Substance is listed.


12 Ecological information

- **Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **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:**
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Water hazard class 3 (Self-assessment): extremely hazardous for water

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Dispose of in accordance with official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**
Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** UN2810
- **UN proper shipping name**
- **DOT** Toxic, liquids, organic, n.o.s. (1,3-propiolactone)
- **ADR** 2810 TOXIC LIQUID, ORGANIC, N.O.S. (1,3-propiolactone)
- **IMDG, IATA** TOXIC LIQUID, ORGANIC, N.O.S. (1,3-propiolactone)
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 6.1 Toxic substances
- **Label** 6.1

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· ADR, IMDG, IATA



· **Class:** 6.1 Toxic substances
 · **Label:** 6.1

· **Packing group**
 · **DOT, ADR, IMDG, IATA** II

· **Environmental hazards**
 · **Marine pollutant:** No

· **Special precautions for user** Warning: Toxic substances
 · **Hazard identification number (Kemler code):** 60
 · **EMS Number:** F-A,S-A
 · **Stowage Category** B
 · **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: E4
 Maximum net quantity per inner packaging: 1 ml
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**
 · **Limited quantities (LQ)** 100 ml
 · **Excepted quantities (EQ)** Code: E4
 Maximum net quantity per inner packaging: 1 ml
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (1,3-PROPIOLACTONE), 6.1, II

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **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.
- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **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** GHS06, GHS07, GHS08

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- **Signal word** *Danger*
- **Hazard statements**
 - Fatal if inhaled.*
 - Causes skin irritation.*
 - Causes serious eye irritation.*
 - May cause cancer.*
- **Precautionary statements**
 - Obtain special instructions before use.*
 - Wear protective gloves/protective clothing/eye protection/face protection.*
 - 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.*
 - If eye irritation persists: Get medical advice/attention.*
- **National regulations:**
- **Information about limitation of use:**
 - Employment restrictions concerning young persons must be observed.*
 - Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.*
- **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** *07/26/2024 / -*
- **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*
 - 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)*
 - HMIS: Hazardous Materials Identification System (USA)*
 - 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*
 - Acute Toxicity - Inhalation 2: Acute toxicity – Category 2*
 - Skin Irritation 2: Skin corrosion/irritation – Category 2*
 - Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A*
 - Carcinogenicity 1B: Carcinogenicity – Category 1B*