

Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 20.02.2025

Version number 4 (replaces version 3)

Revision: 20.02.2025

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

1.1 Product identifier

- Trade name: 2-Mercaptoethanol
- Synonyma Thioglycol



· Article number: 39563

· CAS Number:
60-24-2

· EC number:
200-464-6

- 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: Security Department Phone: +49 6221 13840-35

1.4 Emergency telephone number:

Emergency medical information in case of poisoning

Poison Information Centre Mainz-Tel: +49 (0) 6131 19240

(Counselling in German and English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008:



GHS06

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05

Eye Dam. 1 H318 Causes serious eye damage.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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GHS07

Skin Irrit. 2 H315 Causes skin irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.

· 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: GHS05, GHS06, GHS08, GHS09

· Signal word: Danger

· Hazard statements:

H301+H331 Toxic if swallowed or if inhaled.
 H310 Fatal in contact with skin.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H361 Suspected of damaging fertility or the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 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 GHS05, GHS06, GHS08, GHS09

· Signal word Danger

· Hazard statements

H301+H331 Toxic if swallowed or if inhaled.
 H310 Fatal in contact with skin.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H361 Suspected of damaging fertility or the unborn child.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 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.

· 2.3 Other hazards

· Results of PBT and vPvB assessment:

· **PBT:** PBT - Assessment not available.
 · **vPvB:** vPvB - Assessment not available.

· Determination of endocrine-disrupting properties No further relevant information available.

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SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description:

60-24-2 2-Mercaptoethanol

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- **Identification number(s):**
- **EC number:** 200-464-6
- **Description:**
- **Empirical formula:** C_2H_6OS
- **MW:** 78.13

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.
Remove contaminated clothing.
Remove breathing apparatus only after contaminated clothing have been completely removed.
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **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 contact lenses if possible and continue rinsing. Consult an ophthalmologist immediately.
- **After swallowing:**
Rinse out mouth immediately. Drink plenty of water and provide fresh air. Call a doctor immediately.
- **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 hazardous vapours and gases possible during heating or in case of fire.
In case of fire, the following can be formed, but not limited to:
Sulphur oxides (SOx)
Hydrogen sulfide
Carbon monoxide and carbon dioxide
- **5.3 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.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Wear respirator mask with A(P3 filter immediately
Ensure adequate ventilation
Avoid contact with eyes and skin.
Keep away from ignition sources
- **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 section 13.

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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.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling:**

Work only in fume cupboard.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage**

· **Requirements to be met by storerooms and receptacles:**

Store only in unopened original receptacles.

Storage at +2 to +8 °C

· **Information about storage in one common storage facility:** Store away from oxidising agents.

· **Further information about storage conditions:**

Store under lock and key and with access restricted to technical experts or their assistants only.

Store containers tightly closed and dry.

· **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:** Not required.

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

· **8.2 Exposure controls**

· **Appropriate engineering controls:** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Store protective clothing separately.

Immediately remove all soiled and contaminated clothing

Avoid inhalation of vapours.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

· **Breathing equipment:**

Short term filter device:

Filter A/P3

· **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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
 - Nitrile rubber, NBR
 - PVC gloves
 - 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: | Unpleasant |
| · Odour threshold: | not determined. |
| · Melting point/freezing point: | No information available |
| · Boiling point or initial boiling point and boiling range: | 155-160 °C |
| · Flammability: | Based on available data, the classification criteria for flammable liquids are not met. |
| · Lower and upper explosion limit: | |
| · Lower: | 2.3 Vol % |
| · Upper: | 18 Vol % |
| · Flash point: | 68.3 °C |
| · Auto-ignition temperature: | 295 °C |
| · Decomposition temperature: | No information available |
| · pH: | No information available |
| · Viscosity: | |
| · Kinematic viscosity: | No information available |
| · Dynamic viscosity at 20 °C: | 3.42 mPas |
| · Solubility: | |
| · Water: | Fully miscible |
| · Partition coefficient n-octanol/water (log value): | 0.56003 |
| · Vapour pressure at 20 °C: | 1.3 hPa |
| · Density and/or relative density: | |
| · Density at 20 °C: | 1.12 g/cm ³ |
| · Relative density: | No information available |

· 9.2 Other information

- | | |
|--|---|
| · Appearance: | Further physico-chemical data are not available. |
| · 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. |
| | Not determined. |
| · Molecular weight | 78.1 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 and stored according to specifications.
- **10.3 Possibility of hazardous reactions:** Vapours may form flammable and explosive mixtures with air.

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- **10.4 Conditions to avoid:**
Avoid high temperatures, flames and sparks
Moisture
- **10.5 Incompatible materials:** Avoid contact with strong oxidising agents.
- **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:**
Toxic if swallowed or if inhaled.
Fatal in contact with skin.

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	98-168 mg/kg (rat)
Dermal	LD50	112-224 mg/kg (rabbit)
Inhalative	LC50/4h	2.1 mg/l (rat)
	LC50/96h	37 mg/l (fish)

- **Skin corrosion/irritation:** Causes skin irritation.
- **Serious eye damage/irritation:** Causes serious eye damage.
- **Respiratory or skin sensitisation:** May cause an allergic skin reaction.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Suspected of damaging fertility or the unborn child.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards:**
- **Endocrine disrupting properties:** No relevant information available

SECTION 12: Ecological information

- **12.1 Toxicity:**

- **Aquatic toxicity:**

EC50/48h	0.4 mg/l (<i>Daphnia magna</i>)
EC50/72h	19 mg/l (algae)

- **12.2 Persistence and degradability:** Biodegradability: >70% in 28d (OECD Test No. 309)
- **12.3 Bioaccumulative potential:**
Bioaccumulation potential is not expected.
log Pow = 0.56
- **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:** Bacteria toxicity (EC50, 17h, *Pseudomonas putida*): 125 mg/l
- **Additional ecological information:**
- **General notes:**
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Water danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water.

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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:**

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.

SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR, IMDG, IATA**

UN2966

· **14.2 UN proper shipping name**

· **ADR**

2966 THIOGLYCOL, ENVIRONMENTALLY HAZARDOUS

· **IMDG**

THIOGLYCOL, MARINE POLLUTANT

· **IATA**

THIOGLYCOL

· **14.3 Transport hazard class(es)**

· **ADR, IMDG**



· **Class:**

6.1 Toxic substances.

· **Label:**

6.1

· **IATA**



· **Class**

6.1 Toxic substances.

· **Label**

6.1

· **14.4 Packing group**

· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards**

Environmentally hazardous substance, liquid; Marine Pollutant

· **Marine pollutant:**

Yes (P)

· **Special marking (ADR):**

Symbol (fish and tree)

Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Toxic substances.

· **Hazard identification number (Kemler code):**

60

· **EMS Number:**

F-A,S-A

· **Stowage Category**

A

· **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

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· Transport/Additional information:**· ADR****· 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

· Transport category

2

· Tunnel restriction code

D/E

· 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 2966 THIOGLYCOL, 6.1, II, ENVIRONMENTALLY
HAZARDOUS**SECTION 15: Regulatory information****· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****· Poisons Act****· Regulated explosives precursors** Substance is not listed.**· Regulated poisons** Substance is not listed.**· Reportable explosives precursors** Substance is not listed.**· Reportable poisons** Substance is not listed.**· Directive 2012/18/EU****· Named dangerous substances - ANNEX I** Substance is not listed.**· Seveso category**

H2 ACUTE TOXIC

E1 Hazardous to the Aquatic Environment

· Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t**· Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t**· REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3**· 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 %
I	80-100

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

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

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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:** 04.02.2022· **Version number of previous version:** 3· **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

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

IATA: International Air Transport Association

P: Marine Pollutant

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

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Repr. 2: Reproductive toxicity – Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

GB