

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/04/2022

Reviewed on 02/04/2022

1 Identification

- **Product identifier**
- **Trade name:** 2-Mercaptoethanol
- **Article number:** 28626
- **CAS Number:**
60-24-2
- **EC number:**
200-464-6
- **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**



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.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms** GHS06, GHS08

- **Signal word** Danger

- **Hazard statements**

Toxic if swallowed or if inhaled.

Fatal in contact with skin.

Suspected of damaging fertility or the unborn child.

- **Precautionary statements**

Avoid release to the environment.

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

If swallowed: Immediately call a poison center/doctor.

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

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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 = 3

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**

60-24-2 2-Mercaptoethanol

· **Identification number(s)**

· **EC number:** 200-464-6

· **Impurities and stabilising additives:**

· **Empirical formula:** C₂H₆O S

· **MW:** 78.13

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.

Immediately remove any clothing soiled by the product.

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

· **After inhalation:** Supply fresh air or oxygen; call for doctor.

· **After skin contact:**

Immediate wash with copious amounts of water and soap; rinse thoroughly; seek medical advice.

· **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. Drink plenty of water and supply fresh air.

· **Information for doctor:**

· **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.

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- **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Sulphur oxides (SOx)
Hydrogen sulfide
Carbon monoxide and carbon dioxide
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation
Keep away from ignition sources
Avoid contact with the 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 item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **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.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 0.6 ppm
- **PAC-2:** 3.5 ppm
- **PAC-3:** 29 ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Work only in fume cabinet.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in unopened original receptacles.
Store at +2 to +8 °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.
Keep receptacle tightly sealed and store in dry conditions.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

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

60-24-2 2-Mercaptoethanol (80-100%)

WEEL	Long-term value: 0.2 ppm
	Skin

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- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **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.*
 - 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.*
- **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 protection:** *Tightly sealed goggles*
- **Body protection:** *Protective work clothing*

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Unpleasant
Odor threshold:	Not determined.
- **pH-value:** no information available
- **Change in condition**

Melting point/Melting range:	no information available
Boiling point/Boiling range:	155-160 °C (311-320 °F)
- **Flash point:** 68.3 °C (154.9 °F)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:** 295 °C (563 °F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.

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· Explosion limits:	
Lower:	2.3 Vol %
Upper:	18 Vol %
· Vapor pressure at 20 °C (68 °F): 1.3 hPa (1 mm Hg)	
· Density at 20 °C (68 °F): 1.12 g/cm ³ (9.3464 lbs/gal)	
· Relative density Not determined.	
· Vapor density Not determined.	
· Evaporation rate Not determined.	
· Solubility in / Miscibility with Water: Fully miscible.	
· Partition coefficient (n-octanol/water): -0.05600124	
· Viscosity:	
Dynamic at 20 °C (68 °F):	3.42 mPas
Kinematic:	Not determined.
· Other information No further relevant information available.	

10 Stability and reactivity

- **Reactivity** No further relevant informations available
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Vapours can form flammable and explosive mixtures with air.
- **Conditions to avoid**
Avoid high temperatures, flames, sparks
moisture
- **Incompatible materials:** Avoid contact with strong oxidizers and reducing agents.
- **Hazardous decomposition products:** In case of fire: See Section 5

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **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 (trout)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

EC50/48h	0.4 mg/l (Daphnia magna)
EC50/72h	19 mg/l (Scenedesmus subspicatus)

- **Persistence and degradability** No further relevant information available.

- **Other information:** Biodegradability: >70% in 28d (OECD 309)

- **Behavior in environmental systems:**

- **Bioaccumulative potential**

bioaccumulation potential is not to be expected

log Pow = -0,056

- **Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Very toxic to aquatic life with long lasting effects.

- **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

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **Other adverse effects** Toxicity to bacteria (EC50, 17 h): 125 mg/l (Pseudomonas putida)

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.

14 Transport information

- **UN-Number**

- **DOT, ADR, IMDG, IATA**

UN2966

- **UN proper shipping name**

- **DOT**

Thioglycol

- **ADR**

2966 THIOGLYCOL, ENVIRONMENTALLY HAZARDOUS

- **IMDG**

THIOGLYCOL, MARINE POLLUTANT

- **IATA**

THIOGLYCOL

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· **Transport hazard class(es)**· **DOT**· **Class**

6.1 Toxic substances

· **Label**

6.1

· **ADR, IMDG**· **Class**

6.1 Toxic substances

· **Label**

6.1

· **IATA**· **Class**

6.1 Toxic substances

· **Label**

6.1

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

II

· **Environmental hazards:**

Environmentally hazardous substance, liquid; Marine Pollutant

· **Marine pollutant:**

Ja

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Toxic substances

· **Hazard identification number (Kemler code):** 60· **EMS Number:**

F-A,S-A

· **Stowage Category**

A

· **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 2966 THIOGLYCOL, 6.1, II, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is not listed.
- **Proposition 65** Substance is not listed.
- **Chemicals known to cause cancer:** Substance is not 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)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS06, GHS08
- **Signal word** Danger
- **Hazard statements**
Toxic if swallowed or if inhaled.
Fatal in contact with skin.
Suspected of damaging fertility or the unborn child.
- **Precautionary statements**
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center/doctor.
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** 02/04/2022 / 2
- **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)

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*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**Acute Tox. 3: Acute toxicity – Category 3**Acute Tox. 2: Acute toxicity – Category 2**Repr. 2: Reproductive toxicity – Category 2*

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