

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/20/2025

Reviewed on 02/20/2025

1 Identification

- **Product identifier**
- **Trade name:** 2-Mercaptoethanol
- **Article number:** 39563
- **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:** Security Department Phone: +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 - Oral 3

H301 Toxic if swallowed.

Acute Toxicity - Dermal 2

H310 Fatal in contact with skin.

Acute Toxicity - Inhalation 3

H331 Toxic if inhaled.



GHS08

Toxic to Reproduction 2

H361 Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure 2

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



GHS05

Eye Damage 1

H318 Causes serious eye damage.



GHS07

Skin Irritation 2

H315 Causes skin irritation.

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

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- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:** GHS05, GHS06, GHS07, GHS08

- **Signal word:** Danger

- **Hazard statements:**

Toxic if swallowed or if inhaled.

Fatal in contact with skin.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

- **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.

- **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

- **Description:**

· **Empirical formula:** C_2H_6OS

· **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.

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- 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 existing contact lenses, if possible, and continue rinsing. Consult an ophthalmologist immediately.
 - **After swallowing:** Rinse mouth immediately. Drink plenty of water and fresh air. Call a doctor immediately.
 - **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 hazardous vapors and gases possible during heating or in case of fire.
In case of fire, the following can be released:
Sulfur oxides (SO_x)
Hydrogen sulfide
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 protective clothing.
Wear respirator mask with filter A(P3 immediately
Ensure adequate ventilation
Avoid contact with eyes and skin.
Keep away from ignition sources
- **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:** 0.6 ppm
- **PAC-2:** 2.3 ppm
- **PAC-3:** 14 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.
Ensure good ventilation/exhaustion at the workplace.

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- Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **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 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.
- **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:

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

WEEL	Long-term value: 0.2 ppm
	Skin

- **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.
Store protective clothing separately.
Immediately remove all soiled and contaminated clothing.
Avoid inhalation of vapors.
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
- **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:**
Nitrile rubber, NBR
PVC gloves
Butyl rubber, BR
- **Eye protection:** Tightly sealed goggles

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· **Body protection:** Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information:

· Color:	Colorless
· Odor:	Unpleasant
· Odor threshold:	not determined.
· Melting point/Melting range:	No information available
· Boiling point/Boiling range:	155-160 °C (311-320 °F)
· Flammability (solid, gaseous):	Based on available data, the classification criteria for flammable liquids are not met.
· Explosion limits:	
· Lower:	2.3 Vol %
· Upper:	18 Vol %
· Flash point:	68.3 °C (154.9 °F)
· Auto igniting:	295 °C (563 °F)
· Decomposition temperature:	No information available
· pH-value:	No information available
· Viscosity:	
· Kinematic viscosity:	No information available
· Dynamic viscosity at 20 °C (68 °F):	3.42 mPas
· Solubility in / Miscibility with:	
· Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	0.56003
· Vapor pressure at 20 °C (68 °F):	1.3 hPa (1 mm Hg)
· Vapor pressure:	
· Density at 20 °C (68 °F):	1.12 g/cm ³ (9.3464 lbs/gal)
· Relative density:	No information available

· Other information

Further physicochemical data are not available.

· 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.
Not determined.

· **Molecular weight** 78.1 g/mol

10 Stability and reactivity

· **Reactivity:** No further relevant information available.

· Chemical stability:

· Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions:** Vapors may form flammable and explosive mixtures with air.

· Conditions to avoid:

Avoid high temperatures, flames and sparks

Moisture

· **Incompatible materials:** Avoid contact with strong oxidizing agents.· **Hazardous decomposition products:** In case of fire: see section 5

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11 Toxicological information

· Information on toxicological effects

· 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)

· **on the skin:** Causes skin irritation.· **on the eye:** Causes serious eye damage.· **Sensitization:** May cause an allergic skin reaction.· **Reproductive toxicity:** Suspected of damaging fertility or the unborn child.

· Specific target organ toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure.

· 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.

12 Ecological information

· Toxicity:

· Aquatic toxicity:

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

· **Persistence and degradability:** Biodegradability: >70% in 28d (OECD Test No. 309)

· Bioaccumulative potential:

Bioaccumulation potential is not expected.

log Pow = 0.56

· **Mobility in soil:** No further relevant information available.

· Results of PBT and vPvB assessment:

· **PBT:** Not applicable.· **vPvB:** Not applicable.

· 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 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.

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· **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**

UN2966

· **UN proper shipping name**· **DOT**

Thioglycol

· **ADR**

2966 THIOGLYCOL, ENVIRONMENTALLY HAZARDOUS

· **IMDG**

THIOGLYCOL, MARINE POLLUTANT

· **IATA**

THIOGLYCOL

· **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:**

Yes (P)

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

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· 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

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** GHS05, GHS06, GHS07, GHS08
- **Signal word** Danger
- **Hazard statements**
Toxic if swallowed or if inhaled.
Fatal in contact with skin.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
- **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.

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· **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** 02/20/2025 / 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 (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

P: Marine Pollutant

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)

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 Toxicity - Oral 3: Acute toxicity – Category 3

Acute Toxicity - Dermal 2: Acute toxicity – Category 2

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Sensitization - Skin 1: Skin sensitisation – Category 1

Toxic to Reproduction 2: Reproductive toxicity – Category 2

Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2