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:** 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:** 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)

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

· **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.
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.

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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*
· **Impurities and stabilising additives:**
· **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.
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 instantly. Drink copious amounts of water and provide fresh air. Call for doctor immediately.
· **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.

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5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, 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, 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.
· **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.

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· **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**
· **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 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
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **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:	Undetermined.
Boiling point/Boiling range:	155-160 °C (311-320 °F)

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· **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.
· **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/cm³ (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):**	-0.05601113
· **Viscosity:**	
Dynamic at 20 °C (68 °F):	3.42 mPas
Kinematic:	Not determined.
· **Other information**	There are no more data 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.

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· **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.

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.
· **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.
· **Ecotoxical 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, even in small quantities.
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** No further relevant information available.

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:**	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

· **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.

· **Cancerogenity 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.
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.
· **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
P: Marine Pollutant
EINECS: European Inventory of Existing Commercial Chemical Substances

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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 Tox. 3: Acute toxicity – Category 3
Acute Tox. 2: Acute toxicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2