

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 02.12.2011

Version number 1

Revision: 16.07.2009

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**
- **Application of the substance / the preparation 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: Product Safety department Tel.: +49 6221 13840-35**
- **1.4. Emergency telephone number: +49 6131 19240 (university hospital Mainz)**

SERVA
Electrophoresis

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. 2 H330 Fatal if inhaled.



GHS05

Eye Dam. 1 H318 Causes serious eye damage.



GHS09


Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

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

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

 T+; Very toxic

R27: Very toxic in contact with skin.

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T; Toxic

R23/25: Toxic by inhalation and if swallowed.



Xi; Irritant

R38-41: Irritating to skin. Risk of serious damage to eyes.



Xi; Sensitising

R43: May cause sensitisation by skin contact.



N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Classification system:

The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

2.2. Label elements**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms GHS05, GHS06, GHS09**Signal word Danger****Hazard statements**

H301 Toxic if swallowed.

H310 Fatal in contact with skin.

H330 Fatal if inhaled.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P273 Avoid release to the environment.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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.

P330 Rinse mouth.

P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

2.3. Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients**3.1. Chemical characterization: Substances****CAS No. Description:**

60-24-2 2-Mercaptoethanol

Identification number(s):

EC number: 200-464-6

Description:Empirical formula: C₂H₆O S

MW: 78,13

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4 First aid measures

- **4.1. Description of first aid measures**
- **General information**
Remove contaminated clothing.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation**
Take affected persons into fresh air and keep quiet.
Seek medical treatment.
- **After skin contact** Immediately rinse with water.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Call for doctor immediately.
- **Information for doctor**
- **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.

5 Firefighting measures

- **5.1. Extinguishing media**
- **Suitable extinguishing agents**
CO₂, 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**
In case of fire, the following can be released:
Sulphur dioxide (SO₂)
Carbon monoxide and carbon dioxide
- **5.3. 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

- **6.1. Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **6.2. Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.
- **6.3. Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4. Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **7.1. Precautions for safe handling**
Work only in fume cupboard.
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 respiratory protective device available.*
- **7.2. Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** *Store only in unopened original receptacles.*
- **Information about storage in one common storage facility:** *Not required.*
- **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.
- **7.3. 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.*
- **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**
- **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 P3.
- **Protection of hands:**
Protective gloves.
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
Neoprene gloves
- **Eye protection:** *Tightly sealed goggles.*
- **Body protection:** *Protective work clothing.*

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9 Physical and chemical properties

· 9.1. Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Liquid
Colour:	Colourless
Odour:	Unpleasant

· pH-value (500 g/l) at 20°C: 5

· Change in condition

Melting point/Melting range: undetermined
Boiling point/Boiling range: 157°C

· Flash point: 73°C

· Ignition temperature: 295°C

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower: 2.3 Vol %
Upper: 18 Vol %

· Vapour pressure at 20°C: 3.6 hPa

· Density at 20°C: 1.12 g/cm³

· Solubility in / Miscibility with

Water: Fully miscible

· Viscosity:

dynamic at 23°C: 3.35 mPas

· 9.2. Other information: There are no more data available.

10 Stability and reactivity

· 10.1. Reactivity

· 10.2. Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3. Possibility of hazardous reactions: Reacts with strong acids, strong alcalis and strong oxidizing agents.

· 10.4. Conditions to avoid: No further relevant information available.

· 10.5. Incompatible materials: No further relevant information available.

· 10.6. Hazardous decomposition products:

Sulphur oxides (SO_x)
Hydrogen sulphide
Carbon monoxide and carbon dioxide

11 Toxicological information

· 11.1. Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

Oral	LD50	244 mg/kg (rat)
Dermal	LD50	168 mg/kg (rat)
	LC50/96h	37 mg/l (Fish)

· Primary irritant effect:

· on the skin: Irritant to skin and mucous membranes.

· on the eye: Strong irritant with the danger of severe eye injury.

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· **Sensitization:** Sensitization possible through skin contact.

12 Ecological information

· 12.1. Toxicity

· Aquatic toxicity:

EC50/48h	0.4 mg/l (<i>Daphnia magna</i>)
EC50/72h	18.6 mg/l (<i>Scenedesmus subspicatus</i>)

· **12.2. Persistence and degradability** No further relevant information available.· **Behaviour in environmental systems:**· **12.3. Bioaccumulative potential** No further relevant information available.· **12.4. Mobility in soil** No further relevant information available.· **Ecotoxicological effects:**· **Remark:** Very toxic for fish· **Additional ecological information:**· **General notes:**

Water danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

· **12.5. Results of PBT and vPvB assessment**· **PBT:** PBT - assessment not available.· **vPvB:** vPvB - assessment not available.· **12.6. Other adverse effects** No further relevant information available.

13 Disposal considerations

· 13.1. Waste treatment methods

· Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Must be specially treated adhering to official regulations.

· Uncleaned packagings:

· **Recommendation:** Disposal must be made according to official regulations.· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· 14.1. UN-Number

· **ADR, IMDG, IATA** 2966

· 14.2. UN proper shipping name

· ADR	2966 THIOGLYCOL
· IMDG	THIOGLYCOL
· IATA	Thioglycol

· 14.3. Transport hazard class(es)

· ADR



· Class

6.1 Toxic substances.

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· **Label** 6.1· **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)
Symbol (fish and tree)· **Special marking (ADR):** Symbol (fish and tree)· **14.6. Special precautions for user** Warning: Toxic substances.· **Danger code (Kemler):** 60· **EMS Number:** F-A,S-A· **14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.· **Transport/Additional information:**· **ADR**· **Tunnel restriction code** D/E· **UN "Model Regulation":** UN2966, THIOGLYCOL, 6.1, II**15 Regulatory information**· **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**· **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.· **15.2. 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 MSDS:** Product safety department· **Contact:** +49 6221 13840-35

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· Abbreviations and acronyms:*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**ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**ICAO: International Civil Aviation Organization**P: Marine Pollutant**GHS: Globally Harmonized 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***· * Data compared to the previous version altered.**

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