

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/06/2024

Reviewed on 05/06/2024

## 1 Identification

- **Product identifier**
- **Trade name:** Dithiothreitol
- **Article number:** 39759
- **CAS Number:**  
3483-12-3
- **EC number:**  
222-468-7
- **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:**  
Emergency medical information in case of poisoning  
Poison Information Center Mainz-Tel: +49 (0) 6131 19240  
(Advice in German and English)



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS07

Acute Toxicity - Oral 4 H302 Harmful if swallowed.

- **Label elements**

- **GHS label elements**

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

- **Hazard pictograms:** GHS07

- **Signal word:** Warning

- **Hazard statements:**

Harmful if swallowed.

- **Precautionary statements**

Avoid breathing dust.

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

If swallowed: Call a poison center/doctor if you feel unwell.

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 = 2

Fire = 1

Reactivity = 0

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## · HMIS-ratings (scale 0 - 4)

HEALTH	2	Health = 2
FIRE	1	Fire = 1
REACTIVITY	0	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:

3483-12-3 (R\*,R\*)-1,4-dimercaptobutane-2,3-diol

### · Identification number(s):

· **EC number:** 222-468-7

### · Description:

· **Empirical formula:**  $C_4H_{10}O_2S_2$

· **MW:** 154.25 g/mol

## 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.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

### · After skin contact:

Wash off immediately with soap and water and rinse thoroughly. In case of complaints, consult a doctor.

### · 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 out mouth. In case of complaints, consult a 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:

$CO_2$  extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

### · Special hazards arising from the substance or mixture

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 (SOx)

Carbon monoxide and carbon dioxide

### · Advice for firefighters

· **Protective equipment:** Wear self-contained breathing apparatus.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective clothing.  
Ensure adequate ventilation  
Avoid formation of dust.  
Avoid contact with 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 section 13.  
Pick up mechanically.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** Substance is not listed.
- **PAC-2:** Substance is not listed.
- **PAC-3:** Substance is not listed.
- **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:** Ensure good ventilation/exhaustion at the workplace.
- **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:** Storage at +2 to +8 °C
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
This product is hygroscopic.  
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:** Not required.
- **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.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Short term filter device:  
Filter P2  
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.

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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:**

Natural rubber, NR

Nitrile rubber, NBR

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information:**

· **Color:**

White

· **Odor:**

Characteristic

· **Odor threshold:**

Not determined.

· **Melting point/Melting range:**

40-45 °C (104-113 °F)

· **Boiling point/Boiling range:**

125-130 °C (257-266 °F)

· **Flammability (solid, gaseous):**

No information available

· **Explosion limits:**

· **Lower:**

No information available

· **Upper:**

No information available

· **Flash point:**

>109 °C (>228.2 °F)

· **Decomposition temperature:**

No information available

· **pH-value:**

No information available

· **Viscosity:**

· **Kinematic viscosity:**

No information available

· **Dynamic viscosity:**

No information available

· **Solubility in / Miscibility with:**

· **Water at 20 °C (68 °F):**

1500 g/l

· **Partition coefficient (n-octanol/water):**

No information available

· **Vapor pressure:**

No information available

· **Vapor pressure:**

· **Density:**

No information available

· **Relative density:**

No information available

· **Other information**

· **Appearance:**

· **Form:**

needles

· **Important information on protection of health and environment, and on safety:**

· **Danger of explosion:**

The product is not explosive, but the formation of explosive dust/air mixtures is possible.

· **Molecular weight**

154.24 g/mol

## 10 Stability and reactivity

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

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- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:**  
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
- **Conditions to avoid:**  
Humidity  
High temperatures
- **Incompatible materials:** Avoid contact with strong oxidizers.
- **Hazardous decomposition products:** In case of fire: see section 5

## 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity:** Harmful if swallowed.
  - **LD/LC50 values that are relevant for classification:**
- |      |      |                 |
|------|------|-----------------|
| Oral | LD50 | 400 mg/kg (rat) |
|------|------|-----------------|
- **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 | 27 mg/l (Daphnia magna) |
|----------|-------------------------|
- **Persistence and degradability:** No further relevant information available.
  - **Bioaccumulative potential:** No further relevant information available.
  - **Mobility in soil:** No further relevant information available.
  - **Results of PBT and vPvB assessment:**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
  - **Other adverse 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 2 (Self-assessment): hazardous for water

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Dispose of in accordance with 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.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

· <b>UN-Number</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>UN proper shipping name</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	Void
· <b>Transport hazard class(es)</b>	
· <b>DOT, ADR, ADN, IMDG, IATA</b>	
· <b>Class</b>	Void
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	Void
· <b>Environmental hazards</b>	Not applicable.
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	Not dangerous according to the above specifications.
· <b>UN "Model Regulation":</b>	Void

## 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** GHS07
- **Signal word** Warning
- **Hazard statements**  
Harmful if swallowed.
- **Precautionary statements**  
Avoid breathing dust.  
Wear protective gloves/protective clothing/eye protection/face protection.  
If swallowed: Call a poison center/doctor if you feel unwell.  
If on skin: Wash with plenty of soap and water.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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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** 05/06/2024

· **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)

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 4: Acute toxicity – Category 4