

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Dithiothreitol-Lösung, wässrig

Revision date: 31.03.2021

Product code: 18622.xxxxx

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Dithiothreitol-Lösung, wässrig

#### Further trade names

This MSDS covers the following products in all container sizes:

@morphisto118622.xxxxx Dithiothreitol-Lösung, wässrig

UFI: YTJN-F14T-P001-2HTG

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### Use of the substance/mixture

Use as laboratory reagent. Intended for scientific research and development.

#### Uses advised against

Any non-intended use.

### 1.3. Details of the supplier of the safety data sheet

#### Manufacturer

|               |                          |                                   |
|---------------|--------------------------|-----------------------------------|
| Company name: | MORPHISTO GmbH           |                                   |
| Street:       | Schumannstr. 142/144     |                                   |
| Place:        | D-63069 Offenbach        |                                   |
| Telephone:    | +49 (0) 69 / 400 3019-60 | Telefax: +49 (0) 69 / 400 3019-64 |
| e-mail:       | info@morphisto.de        |                                   |
| Internet:     | http://www.morphisto.de  |                                   |

#### Supplier

|               |                          |                                   |
|---------------|--------------------------|-----------------------------------|
| Company name: | MORPHISTO GmbH           |                                   |
| Street:       | Schumannstr. 142/144     |                                   |
| Place:        | D-63069 Offenbach        |                                   |
| Telephone:    | +49 (0) 69 / 400 3019-60 | Telefax: +49 (0) 69 / 400 3019-64 |
| e-mail:       | info@morphisto.de        |                                   |
| Internet:     | http://www.morphisto.de  |                                   |

### 1.4. Emergency telephone number:

Poison Information Center Mainz, Germany, Tel: +49(0)6131/19240

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No. 1272/2008

This mixture is not classified as hazardous in accordance with Regulation (EC) No. 1272/2008.

### 2.2. Label elements

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### Chemical characterization

aqueous solution

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**Hazardous components**

| CAS No    | Chemical name   |          |          | Quantity |
|-----------|---|----------|----------|----------|
|           | EC No   | Index No | REACH No |          |
|           | GHS Classification  |          |          |          |
| 3483-12-3 | (R*,R*)-1,4-dimercaptobutane-2,3-diol   |          |          | < 1 %    |
|           | 222-468-7   |          |          |          |
|           | Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Aquatic Chronic 3; H302 H315 H319 H335 H412 |          |          |          |

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

| CAS No    | EC No                                    | Chemical name                         | Quantity |
|-----------|--|---------------------------------------|----------|
|           | Specific Conc. Limits, M-factors and ATE |                                       |          |
| 3483-12-3 | 222-468-7                                | (R*,R*)-1,4-dimercaptobutane-2,3-diol | < 1 %    |
|           | oral: LD50 = 400 mg/kg                   |                                       |          |

**Further Information**

Product does not contain listed SVHC substances &gt; 0,1 % according to Regulation (EC) No. 1907/2006 Article 59 (REACH)

**SECTION 4: First aid measures**
**4.1. Description of first aid measures**
**General information**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). In all cases of doubt, or when symptoms persist, seek medical advice.

**After inhalation**

Provide fresh air. In case of respiratory tract irritation, consult a physician.

**After contact with skin**

Wash with plenty of water. Take off contaminated clothing and wash it before reuse. In case of skin irritation, seek medical treatment.

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water. In case of troubles or persistent symptoms, consult an ophthalmologist.

**After ingestion**

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. In all cases of doubt, or when symptoms persist, seek medical advice.

**4.2. Most important symptoms and effects, both acute and delayed**

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures**
**5.1. Extinguishing media**
**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**5.2. Special hazards arising from the substance or mixture**

 Non-flammable. Vapours can form explosive mixtures with air. Can be released in case of fire: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Sulphur dioxide (SO<sub>2</sub>).

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

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#### Additional information

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### General measures

Use personal protection equipment. Ventilate affected area.

##### For non-emergency personnel

Clear danger zone. Follow emergency plan. Consult an expert.

##### For emergency responders

Seal off the sewer.

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains. Cover drains.

#### 6.3. Methods and material for containment and cleaning up

##### For containment

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Cover drains. Harmful to aquatic life.

##### For cleaning up

Clean contaminated objects and areas thoroughly observing environmental regulations.

##### Other information

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

Wear suitable protective clothing. See section 8. Always close containers tightly after the removal of product. Ensure cleanliness and dryness in the workplace.

##### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### Further information on handling

When using do not eat, drink, smoke, sniff. Wear personal protection equipment (refer to section 8). Street clothing should be stored separately from work clothing. Take off contaminated clothing and wash it before reuse. Wash hands and face before breaks and after work and take a shower if necessary. Draw up and observe skin protection programme.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place.

##### Hints on joint storage

Do not store together with: food and feed. pharmaceuticals. Infectious substances. Radioactive substances. Explosive substances. Oxidizing substances. Oxidizing liquids. Organic peroxides. Self-reactive substances and mixtures. Pyrophoric solids. Substances which in contact with water form flammable gases. Ammonium nitrate and preparations containing ammonium nitrate.

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**Further information on storage conditions**

Keep the packing dry and well sealed to prevent contamination and absorption of humidity. Recommended storage temperature: Recommended storage temperature: Protect against: frost. UV-radiation/sunlight. Heat. Humidity.

**7.3. Specific end use(s)**

Use as laboratory reagent. Intended for scientific research and development.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Additional advice on limit values**

To date, no national critical limit values exist.

**8.2. Exposure controls****Appropriate engineering controls**

Provide adequate ventilation. Technical measures and the application of suitable work processes have priority over personal protection equipment. Provide washing facilities at the workplace, provide an eye shower or eyewash bottle and mark them.

**Protective and hygiene measures**

Always close containers tightly after the removal of product. Take off contaminated clothing. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

**Eye/face protection**

Wear safety glasses; chemical goggles (if splashing is possible).

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Information on suitable glove materials is not available at this time.

Recommended material: PVC (Polyvinyl chloride). CR (polychloroprenes, Chloroprene rubber). NBR (Nitrile rubber). Butyl rubber. FKM (fluororubber). Breakthrough time (maximum wearing time): >480 min.

**Skin protection**

Use of protective clothing. Lab apron.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

Suitable respiratory protective equipment: particulates filter device (DIN EN 143). P2 Identification color: white.

**Environmental exposure controls**

Do not empty into drains.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

|                      |             |         |
|----------------------|-------------|---------|
| Physical state:      | liquid      |         |
| Colour:              | transparent |         |
| Odour:               | odourless   |         |
| pH-Value (at 20 °C): |             | 5,0-6,1 |

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**Changes in the physical state**

Melting point: not determined  
Boiling point or initial boiling point and boiling range: 100 °C

**Flammability**

Solid/liquid: not applicable  
Gas: not applicable

**Explosive properties**

The product is not: Explosive.  
Upper explosion limits: not determined

**Self-ignition temperature**

Solid: not applicable  
Gas: not applicable  
Decomposition temperature: not determined

**Oxidizing properties**

The product is not: oxidising.

Vapour pressure: 23 hPa  
(at 20 °C)

Vapour pressure: 123 hPa  
(at 50 °C)

Density: 1,00 g/cm<sup>3</sup>

Water solubility: easily soluble

**Solubility in other solvents**

not determined

Partition coefficient n-octanol/water: not determined

Relative vapour density: not determined

Evaporation rate: not determined

Solvent content: 99,67 %

**9.2. Other information**

Solid content: not determined

**SECTION 10: Stability and reactivity****10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

No known hazardous reactions.

**10.4. Conditions to avoid**

none

**10.5. Incompatible materials**

Alkalis. Reducing agents. Oxidizing agents. Alkali metals. Substances which in contact with water, emit flammable gases.

**10.6. Hazardous decomposition products**

Can be released in case of fire: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO). Sulphur dioxide (SO<sub>2</sub>).

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**SECTION 11: Toxicological information**
**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**
**Acute toxicity**

Based on available data, the classification criteria are not met.

| CAS No    | Chemical name                         |               |         |        |               |  |
|-----------|---------------------------------------|---------------|---------|--------|---------------|--|
|           | Exposure route                        | Dose          | Species | Source | Method        |  |
| 3483-12-3 | (R*,R*)-1,4-dimercaptobutane-2,3-diol |               |         |        |               |  |
|           | oral                                  | LD50<br>mg/kg | 400     | Rat    | External MSDS |  |

**Irritation and corrosivity**

Based on available data, the classification criteria are not met.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Based on available data, the classification criteria are not met.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

The mixture is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].

**SECTION 12: Ecological information**
**12.1. Toxicity**

The product is not: Ecotoxic.

| CAS No    | Chemical name                         |      |           |         |                               |                    |
|-----------|---------------------------------------|------|-----------|---------|-------------------------------|--------------------|
|           | Aquatic toxicity                      | Dose | [h]   [d] | Species | Source                        | Method             |
| 3483-12-3 | (R*,R*)-1,4-dimercaptobutane-2,3-diol |      |           |         |                               |                    |
|           | Acute crustacea toxicity              | EC50 | 27 mg/l   | 48 h    | Daphnia magna<br>(Water flea) | EXOTOX<br>Database |

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

**12.4. Mobility in soil**

The product has not been tested.

**12.5. Results of PBT and vPvB assessment**

The product has not been tested.

**12.7. Other adverse effects**

No information available.

**Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

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**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation. Consult the local waste disposal expert about waste disposal.

**List of Wastes Code - residues/unused products**

160509 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

**List of Wastes Code - used product**

160509 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information****Land transport (ADR/RID)**

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Inland waterways transport (ADN)**

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Marine transport (IMDG)**

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Air transport (ICAO-TI/IATA-DGR)**

|  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

**14.7. Maritime transport in bulk according to IMO instruments**

No dangerous good in sense of this transport regulation.

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**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Information according to 2012/18/EU (SEVESO III): 8 Arsenic trioxide (1327-53-3)

Additional information: H1, P1a, E1, O3, 7, 9, 24, 30

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****Changes**

Rev. 1,00; 31.03.2021; Initial release

**Abbreviations and acronyms**

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

DNEL: Derived No Effect Level

DMEL: Derived Minimal Effect Level

PNEC: Predicted No Effect Concentration

ATE: Acute toxicity estimate

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

LL50: Lethal loading, 50%

EL50: Effect loading, 50%

EC50: Effective Concentration 50%

ErC50: Effective Concentration 50%, growth rate

NOEC: No Observed Effect Concentration

BCF: Bio-concentration factor

PBT: persistent, bioaccumulative, toxic

vPvB: very persistent, very bioaccumulative

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Regulations concerning the international carriage of dangerous goods by rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)

IMDG: International Maritime Code for Dangerous Goods

EmS: Emergency Schedules

MFAG: Medical First Aid Guide

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

MARPOL: International Convention for the Prevention of Marine Pollution from Ships

IBC: Intermediate Bulk Container



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SVHC: Substance of Very High Concern

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>**Relevant H and EUH statements (number and full text)**

|      |  |
|------|--|
| H302 | Harmful if swallowed.                              |
| H315 | Causes skin irritation.                            |
| H319 | Causes serious eye irritation.                     |
| H335 | May cause respiratory irritation.                  |
| H412 | Harmful to aquatic life with long lasting effects. |

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations. The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*