

**Dithiothreitol****DTT****SECTION 1 Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Identification of the product : Raw material  
Product code : DTT  
Trade name : Dithiothreitol  
CAS number : 3483-12-3  
EC No : 222-468-7  
Molecular Formula : C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>S<sub>2</sub>  
Molecular Weight : 154.25 g/mol

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

Use : For research purposes only

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

Company identification **Formedium Ltd.**  
Unit 1B Hunstanton Commercial Park Norfolk  
PE365JQ  
Tel: +44(0)1485 609069  
Fax: +44(0)1485 600510  
E-mail:info@formedium.com

**1.4. Emergency telephone number**

Emergency phone nr : Tel: +44(0)1485 609069 (local time : 9.00 to 17.00)  
National Poison Information Centre :Europe UK : +44 0845 4647 (this service is only available to health professionals)  
See [www.toxbase.org](http://www.toxbase.org) for a local poison centre

**SECTION 2 Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272 / 2008**

Hazard categories:

Acute toxicity : Acute Tox. 4

Skin corrosion / irritation: Skin Irrit. 2

Serious eye damage / eye irritation: Eye Irrit. 2

Specific Target Organ Toxicity - Single exposure: STOT SE 3

Hazard Statements:

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

1,4-Dithiothreitol

**Dithiothreitol****DTT****SECTION 2 Hazards identification (continued)****Labelling Regulation EC 1272/2008 (CLP)****• Hazard pictograms****: Warning****• Signal word****• Hazard statements**

H302 - Harmful if swallowed.

H319 - Causes serious eye irritation.

H315 - Causes skin irritation.

H335 - May cause respiratory irritation.

**• Precautionary statements**

P261 – Avoid breathing dust / fume / gas / mist / vapours / spray.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

P305+P351+P338 - IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses. If present and easy to do. Continue rinsing.

P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 - Store locked up.

P501 – Dispose of contents / container according to regional / national / international regulations to a special disposal facility.

**2.3. Other hazards**

None under normal conditions.

**SECTION 3 Composition/information on ingredients****3.1. Substances****Chemical characterization**

Substance. Dithiothreitol

Sum formula : C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>S<sub>2</sub>

CAS No : 003483-12-3

EC No : 222-468-7

Mol. Weight : 154.25 g/mol

This product is hazardous.

Acute Tox 4. Skin Irrit 2. Eye Irrit. 2 STOT SE 3: H302 H315 H319 H335

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

**Further Information** : Warning – substance not yet tested completely.**SECTION 4 First aid measures****4.1. Description of first aid measures****General Information:** In all cases of doubt, or when symptoms persist, seek medical advice.**Inhalation:** Assure fresh air breathing. Seek medical advice.**Skin contact:** Wash skin with soap and water and rinse thoroughly. Seek medical attention if ill effect develops.**Eye contact:** Keep eyelids open and rinse immediately with plenty of water. Seek medical advice.**Ingestion:** Rinse mouth immediately and drink plenty of water. Seek medical attention if ill effect develops.

Never give anything by mouth to an unconscious person or a person with cramps.

**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**

No information available.

**Dithiothreitol****DTT****SECTION 5 Fire-fighting measures****5.1. Extinguishing media**

**Suitable extinguishing media** : Water spray.  
Alcohol resistant foam.  
Dry extinguishing powder.  
Carbon Dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** : High power water jet.

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

The product itself does not burn. Thermal decomposition can lead to the escape of irritating gases and vapours. In case of fire may be liberated : Carbon Dioxide (CO<sub>2</sub>), Carbon monoxide, Nitrogen oxides (NO<sub>x</sub>)  
Pyrolysis products, toxic.

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Suppress gas/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately.  
Do not allow product to enter drains or surface water.

**SECTION 6 Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. In case of fire : Evacuate area.

**6.2. Environmental precautions**

Do not allow product to enter drains or surface water. Do not empty into drains. Dispose of this material and its container in a safe way.

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

Take up mechanically. Treat the material as prescribed in the section on waste disposal. Clear contaminated areas thoroughly.

**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**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothes. Provide adequate ventilation.

Conditions to avoid : Generation / formation of aerosols.

**Advice on protection against fire and explosion.**

Fight fire with normal precautions from a reasonable distance.

**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed.

**Advice on storage compatibility**

Recommended storage temperature : 2 – 8 °C.

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

For research purposes only.

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

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

Remove contaminated, saturated clothing immediately. Protect skin by using skin protective cream.

After work, wash hands and face. When using do not eat, drink or smoke. Avoid contact with skin, eyes and clothes.

Provide adequate ventilation. Wash hands before breaks and after work.

**Protective and hygiene measures**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

When using do not eat, drink or smoke.

**Eye / face protection**

Wear safety goggles. Note rules for the use of eye and face protection (BGR 192).

**Hand protection**

When handling 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 with the glove supplier.

**Skin protection**

Wear suitable protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear appropriate respiratory protection.

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

Physical state : solid

Colour : white

Odour : characteristic

pH value (at 20°C) : 4.3

**Changes in the physical state**

Melting point : 40 - 43°C

Initial boiling point and boiling range: 125 - 130°C

Flash point : > 109°C

**Flammability**

Solid : not determined

Gas : not determined

Lower explosion limits : not determined

Upper explosion limits : not determined

**Dithiothreitol****DTT****SECTION 9 Physical and chemical properties (continued)****Auto-ignition temperature**

Solid : not determined.

Gas : not applicable.

Decomposition temperature : not determined.

**Oxidizing properties**

Not oxidizing

Vapour pressure : not determined.

Density (at 20°C) : 1 g/cm<sup>3</sup>Bulk density (at 20°C) : approx. 300 kg/m<sup>3</sup>

Water solubility (at 20°C) : 1500 g/L

**Solubility in other solvents**

Not determined

Partition coefficient : -0.48 log POW (calc)

Vapour density : not determined

Evaporation rate : not determined

**9.2. Other information**

Solid content : not determined

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

No data available.

**10.2. Chemical stability**

The product is chemically stable under normal ambient conditions (room temperature).

**10.3. Possibility of hazardous reactions**

Strong oxidizing agents.

**10.4. Conditions to avoid**

Keep away from heat.

**10.5. Incompatible materials**

No data available.

**10.6. Hazardous decomposition products**Thermal decomposition can lead to the escape of irritating gases and vapours. In case of fire the following may be liberated: Carbon dioxide (CO<sub>2</sub>), Carbon monoxide, Nitrogen oxides (NO<sub>x</sub>).

**Dithiothreitol****DTT****SECTION 11 Toxicological information****11.1. Information on toxicological effects****Toxicokinetics, metabolism and distribution**

No data available

**Irritation and corrosivity :** After skin contact; irritant. Irritating to eyes, respiratory system and skin.  
Harmful by inhalation, in contact with skin and if swallowed.  
May cause respiratory irritation.**Acute toxicity :** Oral LD50 – Rat - 400 mg/Kg**Sensitising effects :** No data available.**STOT – repeated exposure :** No data available.**SECTION 12 Ecological information****12.1. Toxicity****48 Hour-EC50 – Acute crustacea toxicity - Daphnia magna [mg/l] :** 27**12.2. Persistence - degradability**

This product has not been tested. No data available.

**12.3. Bioaccumulative potential**

No data available.

**12.4. Mobility in soil**

No data available.

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

No data available.

**12.6. Other adverse effects**

Do not allow entry to soil / subsoil.

Prevent entry into surface water or drains.

**SECTION 13 Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

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

Handle contaminated packages in the same way as the substance itself.

**Waste disposal number of used product**070108 WASTES FROM ORGANIC CHEMICAL PROCESSES ; wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals; other still bottoms and reaction residues.  
Classified as hazardous waste.**Waste disposal number of contaminated packaging**

150110 WASTE PACKAGING ; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances.

**Contaminated packaging**

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

**Dithiothreitol****DTT****SECTION 14 Transport information****14.1. UN Number**

Not applicable

**General information** : Not classified as dangerous in the meaning of transport regulations**14.2. Proper shipping name**

Not applicable

**14.3. Transport Hazard Classification**

Not applicable

**14.4. Packing Group**

Not applicable

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable

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

Ensure all national / local regulations are observed.

**15.2. Chemical safety assessment**

For this substance a chemical safety assessment has not been carried out.

**SECTION 16 Other information****Further information :**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Formedium Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.

**Complete SDS revision**

The contents and format of this SDS are in accordance with REGULATION (EC) No 2015/830 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

**End of document**