

# SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2022  
Date Updated: September 22, 2022

## SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION-----

**Product Name** DTT (Dithiothreitol)  
**Product Code(s)** DB0058  
**Recommended Use** For Laboratory Research Use Only  
Not for Human or Animal Drug Use  
**Synonyms** threo-1,4-Dimercapto-2,3-butanediol; Cleland's reagent  
**Supplier** Bio Basic Inc.  
**Address** 20 Konrad Crescent, Markham, Ontario,  
Canada, L3R 8T4  
**Telephone** (905) 474 4493  
**Fax** (905) 474 5794  
**For Chemical Emergency Phone#** (416) 995 9730

## SECTION 2. ----- HAZARDS IDENTIFICATION -----

### Classification of the substance or mixture:

Acute toxicity, Oral (Category 4) Skin irritation (Category 2)  
Eye irritation (Category 2A) Skin sensitization (Category 1A)  
Specific target organ toxicity - single exposure (Category 3)

### GHS label elements, including precautionary statements:



### WARNING

#### Hazard Statements:

H302 Harmful if swallowed  
H315 Causes skin irritation  
H317 May cause an allergic skin reaction  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation

#### Precautionary Statements:

P261 Avoid breathing dust  
P264 Wash hands and face thoroughly after handling  
P270 Do not eat, drink, or smoke when using this product  
P272 Contaminated work clothing should not be allowed out of the workplace  
P280 Wear protective gloves, clothing, eye protection  
P302+352 IF ON SKIN: Wash with plenty of soap and water  
P304+P340 IF INHALED: Remove person to fresh air and keep 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.  
P312 Call a POISON CENTER if you feel unwell  
P333+P313 If skin irritation or rash occurs: Get medical attention  
P337+P313 If eye irritation persists: Get medical attention. P362+P364 Take off contaminated clothing

and wash it before reuse

**Other hazards which do not result in classification:** No data available.

**SECTION 3. - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -**

<b>Chemical Name</b>	<b>EC No.</b>	<b>CAS-No</b>	<b>Weight %</b>
Dithiothreitol	-	3483-12-3	95-100

**SECTION 4. - - - - - FIRST-AID MEASURES - - - - -**

**Description of necessary first-aid measures**

**Eyes:** In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If irritation occurs or persists, consult a physician.

**Skin:** In case of skin contact immediately flush exposed skin thoroughly with plenty of soap and water. Remove any contaminated clothing and continue to wash skin thoroughly with soap and water for at least 15 minutes. Get medical attention if irritation persists.

**Inhalation:** Remove to fresh air. If any trouble breathing, get immediate medical attention. If irritation or symptoms occur or persist, consult a physician.

**Ingestion:** Do not induce vomiting unless under the direction of a qualified medical professional or Poison Control Centre. If symptoms persist, consult a physician.

**Most important symptoms/effects, acute and delayed:** Skin irritation, red itchy welts on skin.

**Indication of immediate medical attention and special treatment needed, if necessary:** No data available.

**SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -**

**Suitable extinguishing media:** Water spray, carbon dioxide, dry chemical, or foam.

**Specific hazards arising from the chemical:**

Hazardous Combustion Products: No data available.

**Special protective actions for fire-fighters:**

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face operated in positive pressure mode.

**SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES - - - - -**

**Personal precautions, protective equipment and emergency procedures:**

Wear appropriate personal protective equipment as specified in Section 8. Keep personnel away from the clean-up area.

**Environmental Precautions:** Keep out of drains.

**Methods and materials for containment and cleaning up:**

Avoid contact. Avoid formation of dust.. Use a HEPA vacuum to collect solids if available. Dampen spilled material with water to limit dust formation. Material can then be collected in a container and sealed for incineration. Wash spill site after material has been collected.

## SECTION 7. ----- HANDLING AND STORAGE-----

**Precautions for safe handling:** Avoid contact. Avoid formation of dust. Provide appropriate exhaust ventilation. Wash thoroughly after handling. Wear appropriate personal protective equipment as specified in Section 8.

**Conditions for safe storage, including any incompatibilities:** Store in a dry, well-ventilated area. Storage temperature: 2 to 8°C under nitrogen. Protect from moisture.

## SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----

**Control parameters:** Estimated Occupational Exposure Limit (OEL) is 10 micrograms/cubic meter.

**Appropriate engineering controls:** Local exhaust required.

### **Personal protection measures:**

Consult with the Health and Safety Department, Supervisor, and/or other person responsible for PPE selection at respective workplace.

## SECTION 9. ----- PHYSICAL AND CHEMICAL PROPERTIES -----

<b>Appearance:</b>	White powder
<b>Odour:</b>	Unpleasant
<b>Odour threshold:</b>	No data available.
<b>pH:</b>	4 - 6 at 15.4 g/l at 25 °C
<b>Melting point:</b>	42 ± 2°C
<b>Boiling point:</b>	No data available.
<b>Flash point:</b>	113 °C (235 °F) - closed cup
<b>Evaporation rate:</b>	No data available.
<b>Flammability:</b>	No
<b>Flammable limits (% in air):</b>	Lower:No data available. Upper: No data available.
<b>Vapour pressure:</b>	No data available.
<b>Vapour density:</b>	(AIR = 1) No data available.
<b>Relative density:</b>	No data available.
<b>Solubility:</b>	Soluble in water.
<b>Partition coefficient: n-octanol/water:</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Molecular formula:</b>	C <sub>4</sub> H <sub>10</sub> O <sub>2</sub> S <sub>2</sub>
<b>Molecular weight:</b>	154.25 g/mol
<b>Explosion data:</b>	No data available.

## SECTION 10. -----STABILITY AND REACTIVITY -----

**Reactivity:** No data available.

**Chemical stability:** Stable under recommended conditions. May decompose on exposure to moist air or water.

**Possibility of hazardous reactions:** No data available.

**Conditions to avoid:** Store away from oxidizing agents, strong acids or bases.

**Incompatible materials:** Strong acids, bases.

**Hazardous decomposition products:** May produce toxic oxides of carbon and sulphur.

**SECTION 11. ----- TOXICOLOGICAL INFORMATION -----**

**Acute toxicity:** Oral LD50 of 400 mg/kg (rats). Intraperitoneal LD50 154 mg/kg (mice).

**Skin corrosion/irritation:** Causes skin irritation.

**Serious eye damage/irritation:** Causes eye irritation.

**Respiratory or skin sensitization:** Local lymph node assay indicates dermal sensitizer.

**Germ cell mutagenicity:** No data available.

**Carcinogenicity:** No data available.

**Reproductive toxicity:** No data available

**STOT-single exposure:** May cause respiratory irritation

**STOT-repeated exposure:** No data available.

**Aspiration hazard:** No data available.

**Information on the likely routes of exposure:** Inhalation, dermal contact.

**Symptoms related to the physical, chemical and toxicological characteristics:** No data available.

**Delayed and immediate effects/chronic effects from short/long term exposure:** Skin irritation.

Acute health effects:

EYES: Causes eye irritation. SKIN: Causes skin irritation.

INHALATION: May cause respiratory irritation. Harmful if inhaled.

INGESTION: Harmful if swallowed

**Chronic health effects:** To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

**Numerical measures of toxicity:** Oral LD50 of 400 mg/kg (rats)

**Interactive effects:** No data available.

**Other information:** RTECS: EK1610000

**SECTION 12. ----- ECOLOGICAL INFORMATION -----**

**Toxicity:** LC50 Daphnia magna (Water flea) 27 mg/l - 48 h.

**Persistence and degradability:** No data available.

**Bio-accumulative potential:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects:** No data available.

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Disposal methods:** Observe all federal, provincial, state, and local regulations.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**Special Shipping Information:** Not classified as dangerous goods.

**SECTION 15. ----- REGULATORY INFORMATION -----**

**TSCA STATUS:** This material is sold for research and development use only. Use in applications other than research and development may require prior approval from the EPA or inclusion on the TSCA inventory

**DSL/NDSL:** Substance is listed on the DSL.

**EC-No.:** 222-468-7

**SECTION 16. ----- OTHER INFORMATION -----**

<b>Issuing Date</b>	13-Aug-2009
<b>Revision Date</b>	22-Sept-2022
<b>Revision Note</b>	No information available.
<b>Recommended Restrictions</b>	No information available

**Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**End of SDS**