

Material Safety Data Sheet

Version GHS 5.1
Revision date : 1/22/2018

1 . PRODUCT & COMPANY IDENTIFICATION

Product Name : DTT, 1,4-Dithiothreitol
Product Cat No : D0505
CAS No : 3483-12-3
Manufacturer/Supplier : GenDEPOT LLC
PO Box 454
Barker, Tx 77413
Emergency Phone : 866.417.0078
Fax : 281-579-6876

2 . HAZARD IDENTIFICATION

GHS Classification

Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictogram :



Signal word : Warning

Hazard statement(s) :

H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statement(s) :

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not other classified (HNOC) or not covered by GHS

none

3 . COMPOSITION/INFORMATION ON INGREDIENT

Synonyms : threo-1,4-Dimercapto-2,3-butanediol
Cleland's reagent
DTT

Component	Classification	Concentration
(R*,R*)-1,4-Dimercaptobutane-2,3-diol		
CAS No	3483-12-3	95-100%
EC No	224-468-7	
Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Aquatic Acute 3; H302, H315, H319, H402		

4 . FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation: If breathed in, move person into fresh air.
If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water.
Consult a physician.

In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed : Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

5 . FIREFIGHTING MEASURES

Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx).

Further information: Not data available.

6 . ACCIDENTAL RELEASE MEASURES

Personal precaution: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precaution: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for contaminant and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

7 . HANDLING AND STORAGE

Precaution for safe handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Condition for safe storage: Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: Store between the following temperatures:
- 20 °C (2 –8 °C)

8 . EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment:

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Complete suit protecting against chemicals.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9 . PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form	powder
Color	white off

Safety data:

pH	4.0 - 6 at 15.4g/l at 25°C (77°F)
Melting point	41 - 44 °C (106 - 111 °F) - lit.
Freezing point	no data available
Boiling point	120 - 122 °C (248 - 252 °F) - lit.
Flash point	113 °C (235 °F) - closed cup
Ignition temperature	no data available
Auto-ignition temperature	no data available
Lower explosion limit	lower explosion limit: 0.98 %(V)
Upper explosion limit	Upper explosion limit: 9.08 %(V)
Vapor pressure	no data available
Density	no data available
Water solubility	0.05g/l - clear, soluble
Partition coefficient: n-octanol/water	log Pow: 0.05
Relative vapor density	no data available
Odor	unpleasant
Odor threshold	no data available
Evaporation rate	no data available

10 . STABILITY AND REACTIVITY

Chemical stability

May decompose on exposure to moist air or water. Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Condition to avoid

No data available

Materials to avoid

Bases, Oxidizing agents, Reducing agents, Alkali metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.
- Carbon oxides, Sulphur oxides Other decomposition products

11 . TOXICOLOGICAL INFORMATON

Acute Toxicity

Oral LD50 Rat 400 mg/kg

Inhalation LC50 no data available

Dermal LD50 no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Mutagenicity (Germ cell mutagenicity)

no data available

Carcinogenicity

no component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

no component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH.

no component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP

no component of this product present at levels greater than or equal to 0.1% is

Reproductive toxicity

no known significant effects or critical hazards.

Teratogenicity

no data available

Aspiration hazard

no data available

Additional information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema

Specific target organ toxicity— single exposure (GHS)

no data available

Specific target organ toxicity— repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation

Aggravated Medical Condition

Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body.

Synergistic effects

no known significant effects or critical hazards.

Additional information

RTECS : EK1610000

Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

12 . ECOLOGICAL INFORMATION

Toxicity

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 27 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effect

no data available

13 . DISPOSAL CONSIDERATIONS

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14 . TRANSPORT INFORMATION

DOT(US)

UN number: 3335 Class: 9 Packing group: II
 Proper shipping name: A Aviation regulated solid, n.o.s. ((R*,R*)-1,4-Dimercaptobutane-2,3-diol)

IMDG

Not dangerous goods

IATA

UN number: 3335 Class: 9 Packing group: II
 Proper shipping name: A Aviation regulated solid, n.o.s. ((R*,R*)-1,4-Dimercaptobutane-2,3-diol)

International Regulation

Australia (AICS) :	Not determined.
China Inventory (IECSC) :	Not determined.
Japan Inventory :	Not determined
Korea Inventory :	Not determined
New Zealand Inventory of Chemicals (NZIoC):	Not determined
Philippines Inventory (PICCS) :	Not determined.
Malaysia Inventory (EHS Register):	Not determined.
Taiwan inventory (CSNN):	Not determined.

HIMS Rating:

Health hazard :	2
Chronic Health Hazard :	*
Flammability :	1
Physical hazards:	0

NFPA Rating:

Health Hazard:	2
Fire:	1
Reactivity Hazard:	0

15 . REGULATORY INFORMATION

United States

SARA 302 components : no products were found

SARA 313 components : no products were found

SARA 311/312 : Fire Hazard, Acute Health Hazard

Clean Air Act Section 112(b) : not listed
 Hazardous air pollutants (HAPs)

Clean Air Act Section 602 : not listed
 Class I substances

Clean Air Act Section 602 : not listed
 Class II substances

DEA List I Chemicals : not listed
 (Precursor chemicals)

DEA List II Chemicals : not listed
 (Essential chemicals)

States Regulation

Massachusetts : None of the components are listed
 New York : None of the components are listed
 New Jersey : (R*,R*)-1,4-Dimercaptobutane-2,3-diol
 CAS-No. 3483-12-3
 Pennsylvania : (R*,R*)-1,4-Dimercaptobutane-2,3-diol
 CAS-No. 3483-12-3

California Prop. 65 Components :
 None of the components are listed.

Canada

Not determined

Canadian lists
 Canadian NPRI : Not determined
 CEPA Toxic substances : Not determined

16 . OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity
 Aquatic Acute Acute aquatic toxicity
 Eye Irrit. Eye irritation
 H302 Harmful if swallowed.
 H315 Causes skin irritation. .
 H319 Causes serious eye irritation.
 H402 Harmful to aquatic life.

This compound is sold only for research use by personnel familiar chemicals and who are well trained in good laboratory habits, such as avoiding spills, keeping hands clean at all times and no rubbing eyes with working in the laboratory.

This solution is sold only in microliter quantities for use in life sciences research. No other use is intended. And any other use may involve substantive hazards.

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish or legally valid contractual relationship. GenDEPOT LLC, shall not be held liable for any damage resulting from handling of or from with above product. The burden of safe use of this material rests entirely with the user.

Since the conditions of handling, storage and disposal of this material are beyond our control, it is the responsibility of the user to determine whether the material is fit for a particular purpose and/or suitable for the user's method of use or application, and to determine safe conditions for use of the material, and to assume full responsibility for loss, injury and expense arising out of or in connection with the use of material. NO REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, REGARDING THE MATERIAL DESCRIBED HEREIN SHALL BE CREATED BY OR INFERRED FROM ANY STATEMENT OR OMISSION FROM THIS MSDS.

Various government agencies and local authorities may have general or specific regulations applicable to the material which may not be covered in this MSDS. It is sole responsibility of the user to examine and confirm for its full compliance with any such regulations.

When the revision of this MSDS is received, please dispose of the old one.

Department issuing MSDS:
 GenDEPOT LLC
 Safety Department