

SAFETY DATA SHEET



DL-Dithiothreitol (DTT)

Version 1.1

Revised: March 8, 2024

SECTION 1. IDENTIFICATION

Product name DL-Dithiothreitol (DTT)

Manufacturer or supplier's details

Company Impact Proteomics, LLC

Telephone (412) 206-9735

Responsible Department Impact Proteomics, LLC
1406 Browning Rd.
Pittsburgh PA USA
Tel: (412) 206-9735

Email address info@impactproteomics.com

Emergency telephone 1-800-255-3924
ChemTel Chemical Emergency Response Hotline

Recommended use of the chemical and restriction on use

Recommended use Laboratory chemicals

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Acute toxicity, Oral Category 4

Skin Irritation Category 2

Serious eye damage Category 1

Short-term (acute) aquatic hazard Category 3

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H402 Harmful to aquatic life.

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Precautionary statement(s)

P264	Wash skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 + P330	IF SWALLOWED: Call a POISON CENTER/doctor immediately. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P332 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P342 + P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362	Take off contaminated clothing and wash before reuse.
P501	Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture	Substance
Substance Name	DL-Dithiothreitol (DTT)

<u>Component</u>	<u>Classification</u>	<u>Concentration</u>
DL-Dithiothreitol (DTT) CAS-No. 3483-12-3	Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Aquatic Acute 3; H302, H315, H318, H402	<= 100 %

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SECTION 4. FIRST AID MEASURES

General advice	Show this material safety data sheet to the doctor in attendance.
If inhaled	After inhalation: fresh air. Call physician.
In case of skin contact	Wash off immediately with soap and water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
In case of eye contact	Remove contact lenses. Rinse thoroughly with plenty of water. Immediately call an ophthalmologist.
If swallowed	If swallowed: give water to drink (two glasses at most). Seek medical advice.
Most important symptoms and effects, both acute and delayed	The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water, foam, carbon dioxide (CO ₂), dry powder
Specific hazards during firefighting	Carbon oxides, sulfur oxides, combustible, development of hazardous combustion gases or vapors possible in the event of fire.
Special protective equipment for fire-fighters	Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
Further information	Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Methods and materials for containment and cleaning up	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.
Environmental precautions	Do not let product enter drains.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Work under hood. Do not inhale substance/mixture. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.
Conditions for safe storage, including any incompatibilities	Store in tightly closed, original containers in a cool, dry, well-ventilated area. Store between 2-8°C for product stability.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ingredients with workplace control parameters

Contains no substances with occupation exposure limit values.

Exposure Controls

Appropriate engineering controls: Immediately change contaminated clothing. Apply preventative skin protection. Wash hands and face after working with substance.

Personal protective equipment

Wear protective gloves and eye protection

Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.
Skin and body protection	Choose body protection according to the amount and concentration of the dangerous substance at the workplace. Footwear protecting against chemicals.
Respiratory protection	Required when dusts are generated. Recommended filter type: P2
Hygiene measures	Keep away from food and drink. When using do not eat, drink, or smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White
Physical state	Powder
Odor	Unpleasant
Odor Threshold	No data available
pH	No data available
Melting point/range	41-44°C -lit.
Boiling point/range	270-272°C at 1013 hPa- OCED Test Guideline 103
Flash point	Not applicable

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Evaporation rate	No data available
Flammability (solid gas)	No data available
Explosion limits	No data available
Vapor pressure	<0.1 hPa at 25°C- OCED Test Guideline 104
Vapor density	No data available
Density	1.377 g/cm ³ at 20°C- OCED Test Guideline 109
Partition coefficient	No data available
Solubility in water	0.05 g/l- clear, soluble

SECTION 10. STABILITY AND REACTIVITY

Reactivity	The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	This product is chemically stable under standard ambient conditions. May decompose on exposure to moist air or water.
Possibility of hazardous reactions	Violent reactions possible with: strong oxidizing agents.
Conditions to avoid	No information available.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity – oral exposure	LD50 Oral – Rat – Female – 300 - 2000 mg/kg (OCED Test Guideline 423)
Skin corrosion/irritation	Human skin- Skin irritation- 1 h (OCED Test Guideline 439)
Respiratory or skin sensitization	Local lymph node assay – Mouse – Result: Negative (OCED Test Guideline 471)
Serious eye damage/eye irritation	Causes serious eye damage

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Repeated dose toxicity	No data available
Carcinogenicity	<p>IARC: No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.</p> <p>NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.</p> <p>OSHA: No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA</p>
Mutagenicity	<p>Test Type: Ames test</p> <p>Test system: Salmonella typhimurium</p> <p>Metabolic activation: with and without metabolic activation</p> <p>Result: negative</p> <p>Remarks: OCED Test Guideline 471</p>
Specific Target Organ Toxicity from single exposure	No data available
Specific Target Organ Toxicity from Repeated Exposure	No data available
Aspiration hazard	No data available
Additional toxicology information	<p>RTECS: EK1610000 Nausea, Headache, Vomiting, Central nervous system depression</p> <p>To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.</p>

SECTION 12. Ecological Information

Toxicity	<p>static test EC50 - Daphnia magna (Water flea) - 34.8 mg/l - 48 h (OECD Test Guideline 202)</p> <p>static test ErC50 - Pseudokirchneriella subcapitata - 24.3 mg/l - 72 h (OECD Test Guideline 201)</p>
Persistence and degradability	<p>aerobic - Exposure time 43 d Result: 50 % - Not readily biodegradable. (OECD Test Guideline 301B) Remarks: The 10 day time window criterion is not fulfilled.</p>
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT and vPVB assessment	<p>PBT/vPvB assessment not available as chemical safety assessment not required/not conducted</p>
Other adverse effects	No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Waste from residues/unused product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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SECTION 14. TRANSPORT INFORMATION

Transportation by land – Department of Transportation (DOT, United States of America)

Not dangerous goods.

Transportation by air – International Air Transport Association (IATA)

UN number	3335
UN proper shipping name	Aviation regulated solid, n.o.s. ((R*,R*)-1,4-Dimercapto-2,3-butanediol)
Transport hazard class	9
Packaging group	III

SECTION 15. REGULATORY INFORMATION

Occupational Safety and Health Administration Hazards

Not listed

SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Toxic Release Inventory (TRI)

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Proposition 65

No data available

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SECTION 16. OTHER INFORMATION

Document Revision

Last Revision Date: 3/8/24

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardization; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organization for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

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DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and Impact Proteomics, LLC. assumes no legal responsibility or liability whatsoever resulting from its use.