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SECTION 1: COMPANY AND PRODUCT INFORMATION

1.1 Product identifiers

Product name : DTT 100mM
Product code : 40420001
CAS number : 3483-12-3
Synonyms : DL-Dithiothreitol,
threo-1,4-Dimercapto-2,3-butanediol,
:
Cleland's reagent,
DTT

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

Identified uses : Laboratory chemicals, synthesis of substances.

1.3 Details of the supplier of the safety data sheet

Address : Genelix International Inc, dba bioWORLD
4150 Tuller Rd. Suite 228
Dublin, OH 43017
Email : tech@bio-world.com
Phone : 614-792-8680, Toll free: 1-888-bio-PLUS
Fax : 614-792-8685

1.4 Emergency telephone number

Emergency phone : 1-888-bio-PLUS

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Acute toxicity, Oral(Category 4), H302.
Skin irritation(Category 2), H315.
Eye irritation(Category 2A), H319.

2.2 GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral(Category 4), H302.
Skin irritation(Category 2), H315.
Eye irritation(Category 2A), H319.

2.3 Label elements and 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/ 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.

2.4 Hazards not otherwise classified (HNOC) or not covered by GHS

No unclassified hazards known.

2.5 NFPA Rating

Health hazard : 2
Fire hazard : 1
Reactivity hazard : 0

2.6 HMIS Rating

Health hazard : 2
Chronic health hazard : 0
Reactivity hazard : 0
Flammability : 1
Physical hazard : 0

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance	CAS#	EC#	Concentration
Dithiothreitol M.F: C ₄ H ₁₀ O ₂ S ₂ M.W: 154.25 g/mol	3483-12-3	222-468-7	≤5%

3.2 Hazardous components & classification

Acute Tox.4; Skin Irrit.2; Eye Irrit.2A; H302, H315, H319

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

In case of inhalation

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

In case of skin contact

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

In case of ingestion

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

4.2 Most important symptoms and effects, both acute and delayed

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

4.3 Indication of any immediate medical attention and special treatment needed

No special treatment indicated. Provide treatment in accordance with exhibited systems.

SECTION 5: FIREFIGHTING MEASURES

5.1 Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide are suitable

5.2 Unsuitable extinguishing media

Not available

5.3 Special hazards arising from the substance

Combustion will produce oxides of carbon, nitrogen and sulfur.

5.4 Advice for firefighters

Wear protective gear, such as self-contained breathing apparatus, if necessary

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8

6.2 Environmental precautions

Prevent product from entering public sewers and waterways.

6.3 Methods and material for containment and cleaning up

Use inert absorbent material to absorb any spilled or leaked product. Keep in suitable, closed containers for disposal.

For proper disposal see section 13

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Store in cool, well ventilated area. Keep container tightly closed. Light Sensitive. Product is hygroscopic. Take precautions to avoid contact with atmospheric moisture. Store under Argon. Store at -20 °C

Incompatible materials : Bases, oxidizing agents, reducing agents, and alkali metals are incompatible with this material.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values. Hazardous components without workplace control parameters

8.2 Engineering controls

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

8.3 Personal protective equipment

Eye/face 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 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.

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

Respiratory protection : For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK -P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure : Do not let product enter drains.

General hygiene considerations : Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	: Clear, colorless
b)	Physical states	: Liquid
c)	Odor	: unpleasant
d)	Odor threshold	: Not available
e)	Melting point	: 41 - 44 °C (106 - 111 °F)
f)	Boiling point range	: Not available
g)	pH	: 4.0 - 6 at 15.4 g/l at 25 °C (77 °F)
h)	Density	: Not available
i)	Flash point	: 113
j)	Evaporation rate	: Not available
k)	Flammability	: Not available
l)	Upper/lower flammability or explosive limits:	: Not available
m)	Vapor pressure	: Not available
n)	Vapor density	: Not available
o)	Relative density	: Not available
p)	Water solubility	: Not available
q)	Partition coefficient:n-octanol/water	: log Pow: 0.05
r)	Autoignition temperature	: Not available
s)	Decomposition temperature	: Not available
t)	Kinematic viscosity	: Not available
u)	Explosive properties	: Not available
v)	Oxidizing properties	: Not available
w)	Solubility in other solvents	: Not available
x)	Surface tension	: Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity is known. Non-reactive under normal use.

10.2 Chemical stability

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

10.3 Stability note(s)

No special or unusual instability known.

10.4 Polymerization

No known polymerization possible.

10.5 Possibility of hazardous reactions

No known hazardous reactions are possible.

10.6 Incompatible materials

Bases, Oxidizing agents, Reducing agents, Alkali metals

10.7 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

LD50 Oral : Rat - 400 mg/kg

LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

11.2 Skin corrosion/irritation

No skin/corrosion irritation data available.

11.3 Serious eye damage/eye irritation

No eye damage/irritation data available.

11.4 Respiratory or skin sensitization

No sensitization data available.

11.5 Germ cell mutagenicity

No mutagenicity data available.

11.6 Carcinogenicity

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 IARC.

ACGIH : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by ACGIH.

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.

OSHA : No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

11.7 Reproductive toxicity

No reproductive toxicity data available.

11.8 Specific target organ toxicity – single exposure

No specific organ toxicity data available.

11.9 Specific target organ toxicity – repeated exposure

No specific organ toxicity data available.

11.10 Aspiration hazard

No aspiration hazard data available.

11.11 Additional Information

RTECS: No RTECS data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No ecological toxicity data available.

12.2 Aquatic toxicity

No aquatic toxicity data available.

12.3 Persistence and degradability

No persistence/degradability data available.

12.4 Bioaccumulative potential

No bioaccumulation data available.

12.5 Mobility in soil

No soil mobility data available.

12.6 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

12.7 Other adverse effect

No other adverse effect data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

13.2 Packaging

Dispose of as unused product.

13.3 Recommendation

Disposal must be made according to official regulations.

SECTION 14: TRANSPORTATION INFORMATION

14.1 DOT (US)

Not dangerous goods

14.2 IMDG

Not dangerous goods

14.3 IATA

Not dangerous goods

SECTION 15: REGULATORY INFORMATION

15.1 SARA

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

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.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard.

15.2 Clean water act (CWA)

No chemicals are present in this product that are subject to regulation under the Clean Water Act.

15.3 Right to know components

Massachusetts : No chemicals are present which require disclosure under the Massachusetts Right to Know Act.

Pennsylvania : (R*,R*)-1,4-Dimercaptobutane-2,3-diol CAS-No-3483-12-3

New Jersey : (R*,R*)-1,4-Dimercaptobutane-2,3-diol CAS-No-3483-12-3

California : This product contains no chemicals which are known to the State of
proposition 65 California to cause cancer, or birth defects or other reproductive harm.
components

SECTION 16: OTHER INFORMATION

16.1 Disclaimer

This product is offered by bioWORLD for research, laboratory or further manufacturing use. Not for human use or consumption. The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchant-ability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall bio-WORLD.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if bio-WORLD.com has been advised of the possibility of such damages.

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16.2 Preparation Information

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