Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Identification of the substance or mixture

Product code 20290
Product name DITHIOTHREITOL (DTT,CLELAND'S REAGENT)5 GM

Company/undertaking identification

Life Technologies Corporation
5781 Van Allen Way
PO Box 6482
Carlsbad, CA 92008
+1 760 603 7200

Life Technologies
5250 Mainway Drive
Burlington, ONT
CANADA L7L 6A4
800/263-6236

Thermo Fisher Scientific
Pierce Biotechnology
P.O. Box 117
Rockford, IL 61105
United States
1.815.968.0747 or
1.800.874.3723

24 hour Emergency Response:
866-536-0631
301-431-8585
Outside of the U.S. +1-301-431-8585

Country specific Emergency Number (if available):
CHEMTREC Brazil (Rio De Janeiro) +(55)-2139581449 (português)

Use as laboratory reagent. Scientific research and development.

SECTION 2: Hazards identification

GHS - Classification

Signal Word
WARNING

Health hazards

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

Specific target organ systemic toxicity (single exposure)	Category 3

Physical hazards
Not classified

Hazard Statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
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
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P273 - Avoid release to the environment
P332 + P313 - If skin irritation occurs: Get medical advice/attention

Principle Routes of Exposure
Potential Health Effects

eyes	Irritating to eyes.
Skin	Irritating to skin.
inhalation	May cause irritation of respiratory tract.
Ingestion	May be harmful if swallowed.
Injection	May be harmful if injected.

Specific effects

Carcinogenic effects	None.
Mutagenic effects	None.
Reproductive toxicity	None.
Sensitization	None.
Target Organ Effects	No information available.

HMIS

Health	2
Flammability	0
Reactivity	0

SECTION 3: Composition/information on ingredients

Component	CAS-No	EINECS-No	Weight %
(DTT) 2,3-Butanediol, 1,4-dimercapto-, (theta, theta)- 3483-12-3 (98-100)	3483-12-3	222-468-7	98-100

We recommend handling all chemicals with caution.

SECTION 4: First aid measures

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Take off all contaminated clothing and wash it before reuse. Immediate medical attention is required.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Ingestion Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice.

inhalation Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

H302 - Harmful if swallowed, H315 - Causes skin irritation, H319 - Causes serious eye irritation, H335 - May cause respiratory irritation, H412 - Harmful to aquatic life with long lasting effects

Notes to Physician Treat symptomatically.

SECTION 5: Firefighting measures

Suitable extinguishing media Water spray. Carbon dioxide (CO2). Foam. Dry chemical.

Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit.

Specific hazards arising from the chemical Not known

SECTION 6: Accidental release measures

Personal precautions Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system.

See Section 12 for more information.

SECTION 7: Handling and storage

Handling Always wear reccommended Personal Protective Equipment. No special handling advices are necessary.

Storage Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

SECTION 8: Exposure controls/personal protection

Exposure Limits

Chemical Name	OSHA PEL	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
(DTT) 2,3-Butanediol, 1,4-dimercapto-, (theta, theta)-	None	None	None	None

Engineering measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Personal Protective Equipment requirements are dependent on the user institution's risk assessment and are specific to the risk assessment for each laboratory where this material may be used.

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Impervious gloves.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and Body Protection	Lightweight protective clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	Do not allow material to contaminate ground water system.

SECTION 9: Physical and chemical properties

General information

Form	powder	
Appearance	No information available	
Odor	Mixture has not been tested	
Odor Threshold	Mixture has not been tested	
Boiling point / boiling range	**°C** No data available	**°F** No data available
Melting point / melting range	**°C** No data available	**°F** No data available
flash point	**°C** No data available	**°F** No data available
Autoignition Temperature	**°C** No data available	**°F** No data available
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	
Oxidizing properties	Mixture has not been tested	
Water solubility	No data available	
Upper explosion limit	No data available	
Lower explosion limit	No data available	
Partition coefficient: n-octanol/water	No data available	
Vapor Pressure	No data available	
vapor density	No data available	
Viscosity	Mixture has not been tested	
pH value	No data available	

SECTION 10: Stability and reactivity

Stability	Stable under normal conditions.
Materials to avoid	No information available.
Possibility of hazardous reactions	Hazardous reaction has not been reported
Hazardous decomposition products	No information available.
polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None under normal processing.

SECTION 11: Toxicological information

Acute Toxicity

Chemical Name	LD50 (oral,rat/mouse)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat/mouse)
(DTT) 2,3-Butanediol, 1,4-dimercapto-, (theta, theta)-	No data available	No data available	No data available

Principle Routes of Exposure

Potential Health Effects

eyes	Irritating to eyes.
Skin	Irritating to skin.
inhalation	May cause irritation of respiratory tract.
Ingestion	May be harmful if swallowed.
Injection	May be harmful if injected.
Carcinogenic effects	None.
Mutagenic effects	None.
Reproductive toxicity	None.
Sensitization	None.
Target Organ Effects	No information available

SECTION 12: Ecological information

Ecotoxicity	Hazardous to the Aquatic Environment.
Chronic aquatic toxicity	Category 3.
Mobility	No information available.
Biodegradation	No information available.
Bioaccumulation	No information available.

SECTION 13: Disposal considerations

Dispose of contents/containers in accordance with local regulations.

SECTION 14: Transport information

IATA

Proper Shipping Name	Aviation regulated solid, n.o.s. (Dithiothreitol) ((R*,R*)-1, 4-dimercaptobutane-2,3-diol)
Hazard Class	9
Subsidiary class	None
Packing group	None
UN-No	UN3335
Environmental hazards	No

SECTION 15: Regulatory information

Component	US TSCA
(DTT) 2,3-Butanediol, 1,4-dimercapto-, (theta, theta)- 3483-12-3 (98-100)	Listed

US Federal Regulations

SARA 313
This product is not regulated by SARA.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contains HAPs.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

WHMIS Hazard Class

D1B - Toxic materials
D2B - Toxic materials

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16: Other information

Reason for revision SDS sections updated.

Use as laboratory reagent. Scientific research and development.

"The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein. THE INFORMATION IN THIS SDS DOES NOT CONSTITUTE A WARRENTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PUPOSE"

End of Safety Data Sheet