

MSDS Number: C4807 * * * * * Effective Date: 02/15/08 * * * * * Supercedes:
04/28/05

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

DITHIOTHREITOL

1. Product Identification

Synonyms: Threitol, 1,4-dithio-,dl-; 2,3-butanediol, 1,4-dimercapto dl-threo; Cleland's Reagent; DTT

CAS No.: 3483-12-3 (also identified as CAS# 27565-41-9)

Molecular Weight: 154.26

Chemical Formula: C₄H₁₀O₂S₂

Product Codes:

J.T. Baker: F780, F781

Mallinckrodt: 7750

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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1,4-Dithiothreitol (Clelands Reagent)	3483-12-3	100%
Yes		

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT CENTRAL NERVOUS SYSTEM.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Can cause nausea, headache and vomiting. Exposure may result in blood in urine, difficulty breathing, irregular heartbeat, anaemia, weakness, drunkenness, bluish skin color, lung congestion, kidney damage, paralysis, convulsions unconsciousness and coma. Thiols may cause central nervous system depression (CNS).

Ingestion:

Exposure can cause nausea, headache, vomiting, diarrhea, weakness, drunkenness, restlessness, bluish skin color, paralysis and coma.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain. May be absorbed through the skin. May cause dermatitis.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire Fighting Measures

Fire:

Flash point: > 109C (> 228F) CC

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not

generate dust.

7. Handling and Storage

Product must be refrigerated at 2 - 8C (36 - 46F). Keep in a tightly closed container. Protect against physical damage. Handle and store under nitrogen. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Thiol odor.

Solubility:
Soluble in water.
Specific Gravity:
1.0
pH:
4.3 (5% solution)
% Volatiles by volume @ 21C (70F):
0
Boiling Point:
125 - 130C (257 - 266F)
Melting Point:
42 - 43C (108 - 109F)
Vapor Density (Air=1):
5.3
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. Hygroscopic.
Hazardous Decomposition Products:
Burning may produce carbon monoxide, carbon dioxide, sulfur oxides.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Strong oxidizers.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

For 1,4-Dithiothreitol: Oral rat LD50: 400 mg/kg. Investigated as a mutagen.

-----\Cancer Lists\-----

Ingredient
Category

---NTP Carcinogen---		IARC
Known	Anticipated	

1,4-Dithiothreitol (Clelands None Reagent) (3483-12-3)	No	No
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12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----			
Ingredient	TSCA	EC	Japan
Australia			
1,4-Dithiothreitol (Clelands Reagent) Yes (3483-12-3)	Yes	Yes	No

-----\Chemical Inventory Status - Part 2\-----			

--Canada--			

Ingredient	Korea	DSL	NDSL
Phil.			
-----\Federal, State & International Regulations - Part 1\-----			
1,4-Dithiothreitol (Clelands Reagent)	No	Yes	No
No (3483-12-3)			
-----\Federal, State & International Regulations - Part 1\-----			
313-----	-SARA 302-		-----SARA
Ingredient	RQ	TPQ	List
Chemical Catg.			
-----\Federal, State & International Regulations - Part 2\-----			
1,4-Dithiothreitol (Clelands Reagent)	No	No	No
No (3483-12-3)			
-----\Federal, State & International Regulations - Part 2\-----			
TSCA-		-RCRA-	-
Ingredient	CERCLA	261.33	8 (d)
-----\Federal, State & International Regulations - Part 2\-----			
1,4-Dithiothreitol (Clelands Reagent)	No	No	No
(3483-12-3)			

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **2** Flammability: **1** Reactivity: **0**

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED OR INHALED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY AFFECT

CENTRAL NERVOUS SYSTEM.

Label Precautions:

- Avoid breathing dust.
- Avoid contact with eyes, skin and clothing.
- Keep container closed.
- Use with adequate ventilation.
- Wash thoroughly after handling.
- Store refrigerated.
- Handle and store under nitrogen.

Label First Aid:

If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

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