
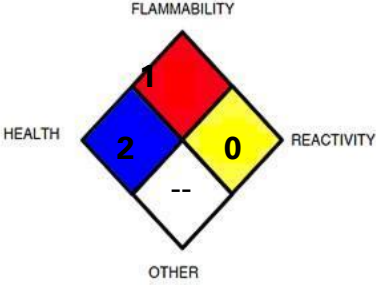
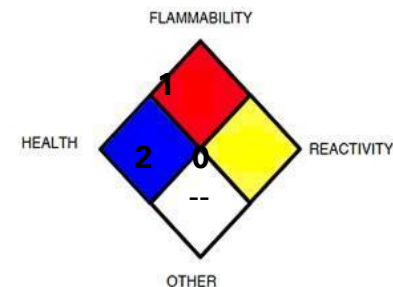


Material Safety Data Sheet

Section 1: Product & Company Identification	
Product Name:	DITHIOTHREITOL, DTE
Product #:	D-2589
Synonyms:	Dithiothreitol; Cleland's Reagent; DTE; (2R,3R)-REL-1,4-DIMERCAPTO-2,3-BUTANEDIOL; (±)-1,4-DIMERCAPTO-2,3-BUTANEDIOL; (±)-DITHIOTHREITOL; 1,4-DITHIO-DL-THREITOL; 1,4-DITHIOTHREITOL; DL-1,4-DIMERCAPTO-2,3-DIHYDROXYBUTANE
Supplier:	A.G. Scientific, Inc. 6450 Lusk Blvd E102 San Diego CA 92121 Tele# + 858-452-9925 Fax# + 858-452-9926
Emergency Tele#:	ChemTel, Tele# in USA 1-800-255-3924, International 1-813-248-0585

Section 2: Composition / Information on Ingredients				
Component	CAS#	EC #	%	HCS Classification
DITHIOTHREITOL, DTE	6892-68-8		≥99.0%	

Section 3: Hazards Identification	
Symbols	 <small>GHS07 Harmful</small>
HMIS Classification	

NFPA Classification	
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Section 4: First Aid Measures

General Overview:	Avoid contact, wear suitable protective clothing, gloves and eye/face protection.
Inhalation:	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration, seek medical attention.
Skin:	Wash immediately with water for 15 minutes. Remove contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if symptoms appear.
Eyes:	In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes. Remove contacts. Assure adequate flushing of the eyes by separating the eyelids with fingers.
Ingestion:	If swallowed, DO NOT induce vomiting. Wash mouth with water, NEVER give anything to unconscious person. Seek medical attention.
	See section 11 for more detailed information on health effects & symptoms

Section 5: Fire Fighting Measures

Flammability of the product:	N/A
Extinguishing Media:	Dry Chemical Powder for SMALL FIRES and carbon dioxide or water spray, fog or foam for LARGE FIRES. Do not use water jet.
Hazardous thermal (de)composition products:	Thermal decomposition may produce toxic fume of carbon monoxide toxic fume, carbon dioxide, oxides of sulphur, hydrogen sulphide gas
Special Fire Fighting Procedures:	Wear self-contained breathing apparatus (SCBA) and protective clothing to prevent contact with skin and eyes. Be sure to use an approved/certified respirator or equivalent.
Flash Point:	N/A

Section 6: Accidental Release Measures





Personal Precautions:	Use Personal Protection Equipment. Splash goggles, Gloves. Keep away unprotected personnel from entry towards hazard area.
Environmental Precautions:	Do not let product enter drains.

Methods for Clean-up:	Avoid raising dust, sweep up & shovel into suitable disposal container. Ventilate area and wash spill site after material pickup is complete.
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SECTION 7: Handling & Storage

Storage:	Recommended storage temperature is 2-8 °C under Nitrogen and protect from moisture. Keep container tightly closed and in cool, dry, well ventilated area.
Handling:	Use only in area provided with appropriate exhaust ventilation. Keep away from heat and source of ignition. Empty containers pose a fire risk, evaporate residue under fume hood. Ground all equipment containing material. Do not breathe dust.

SECTION 8: Exposure controls / Personal Protection

Respiratory Protection:	 <p>If exposure limit (<u>10microgram/cubic meter</u>) reached use ventilation system when handling or wear appropriate government (NIOSH/MSHA) approved respirator.</p>
Skin and Body:	  <p>Chemical-resistant gloves and lab coat/other protective clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling.</p>
Eyes:	 <p>Safety goggles.</p>
Ventilation/Engineering Measures:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Hygiene:	Wash hands after handling compound and before eating, smoking, using lavatory and at the end of the day.
Other:	Contains no substances with occupational exposure limit values.

SECTION 9: Physical and Chemical Properties

Appearance & Odor:	White powder
Formula	C ₄ H ₁₀ O ₂ S ₂
Molecular Wt.	154.25 g/mol
Melting Pt.	>81°C
Boiling Pt.	N/A
Density:	N/A
Vapor Pressure:	N/A
Evaporation Rate:	N/A
Vapor Density:	N/A
Solubility:	Water soluble
Flash Point:	N/A
Autoignition Temp:	N/A

SECTION 10: Stability and Reactivity

Stability:	Stable under proper storage conditions
Hazardous decomposition products:	Toxic fume of carbon monoxide, carbon dioxide, oxides of sulphur
Materials to Avoid:	Strong oxidizing agents, strong acids, alkali metals and bases
Conditions to avoid:	Fire

SECTION 11: Toxicological Information

RTECS#:	N/A
ACUTE Toxicity:	309 mg/kg (Rat)
CHRONIC Toxicity:	N/A
Chronic Exposure: Carcinogen: Mutagen: Teratogen: Reproductive:	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. AGGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, potential human carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as known or, anticipated human carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as known or, potential human carcinogen by OSHA. EPA: No classification on carcinogenic data is available from EPA

SECTION 12: Ecological Information	
Ecotoxicity:	N/A
Mobility:	Likely due to water solubility
Persistence and degradability:	Not likely due to water solubility
Bioaccumulative potential:	N/A
Other adverse effects:	N/A
Corrosivity Characteristic:	N/A
General Notes:	Do not allow undiluted product or large quantities of it to reach groundwater, water course or sewer system. Do not allow materials to be released into the environment without proper government permits.

SECTION 13: Disposal Considerations	
Residue Waste or Unused product:	Only professional staff trained in such techniques must undertake waste disposal. Observe all appropriate federal, provincial or state and local regulations.
Contaminated Packaging:	Do not re-use empty containers. Dispose of as unused product.

SECTION 14: Transportation Information	
UN ID#:	UN3335
ADR / RID (LAND):	AVIATION REGULATED SOLID, N.O.S Class 9
DOT regulations:	AVIATION REGULATED SOLID, N.O.S Class 9
IMDG/IMO (SEA):	Not shipping hazard
IATA/DGR (AIR):	AVIATION REGULATED SOLID, N.O.S Class 9
Special Provisions:	N/A

SECTION 15: Regulatory Information	
Health Phrases:	H302: Acute oral toxicity, Harmful if swallowed Cat. 4 H315: Skin Corrosion/irritation, causes skin irritation Cat. 2 H317: May cause skin irritation Cat. 2 H319: Serious Eye Damage/Eye Irritation Cat. 2 Specific target organ toxicity (single exposure) Category 3 H335 Target Organs - Respiratory system. Combustible Dusts Category 1
Risk Phrases:	N/A
Safety Phrases:	N/A

EU Regulations:	N/A
US Regulations:	TSCA. No products were found. California Proposition 65: No products were found.
U.S. Federal Regulations:	SARA 302/304/311/312 extremely hazardous substances: No products were found SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: No products were found. SARA 311/312 MSDS distribution-chemical inventory-hazard identification: No products were found. SARA 313 toxic chemicals notification and release reporting: No products were found. Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found. Clean Air Act (CAA) 112 accidental release prevention: No products were found. Clean Air Act (CAA) 112 regulated flammable substances: No products were found. Clean Air Act (CAA) 112 regulated toxic substances: No products were found. OSHA: No products were found.
WHMIS (Canada):	N/A

SECTION 16: Other Information

LIABILITY STATEMENT: *The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. A.G. Scientific shall not be held liable for any damages resulting from handling or from contact with the above product. A.G. Scientific products are for research purposes only. Not for human use or consumption.*