



Material Safety Data Sheet

Dithiothreitol

MSDS# 13313

Section 1 - Chemical Product and Company Identification

MSDS Name: Dithiothreitol

Catalog Numbers: AC165680000, AC165681000, AC327190000, AC409190000, AC409190010, AC409190050, AC409190050, 16568-0010, 16568-0050, 16568-0250, 32719-0100, BP172-25, BP172-5, EK1346774, EK1346782

Synonyms: DL-1,4-Dithiothreitol; Cleland's reagent; DTT; DL-1,4-Dimercapto-2,3-dihydroxybutane; threo-2,3-dihydroxy-1,4-dithiolbutane; 2,3-Butanediol, 1,4-dimercapto-, (2R,3R)-rel-; (R*,R*)-1,4-dimercaptobutane-2,3-diol.

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

Company Identification: (USA) Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

Risk Phrases:

CAS#: 3483-12-3

Chemical Name: Dithiothreitol

%: >98

EINECS#: 222-468-7

Hazard Symbols:

Text for R-phrases: see Section 16

Hazard Symbols: XN



Risk Phrases: 22 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Harmful if swallowed. Stench. Refrigerate upon arrival below 4°C/39°F. Causes eye, skin, and respiratory tract irritation. Target Organs: Respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. May be harmful if absorbed through the skin.
 Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause central nervous system depression.
 Inhalation: Causes respiratory tract irritation. May be harmful if inhaled.
 Chronic: No information found.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
 Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
 Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
 Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
 Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
 Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
 Autoignition Temperature: Not available
 Flash Point: > 110 deg C (> 230.00 deg F)
 Explosion Limits: Not available
 Lower: Not available
 Explosion Limits: Not available
 Upper: Not available
 NFPA Rating: health: 2; flammability: 1; instability: 1;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
 Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Avoid use in confined spaces.
 Storage: Storage under a nitrogen blanket has been recommended. Store in air tight containers. Refrigerate upon arrival below 4°C/39°F. Supplier recommends temperatures below -20°C for long-term storage.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Dithiothreitol	none listed	none listed	none listed
Deleted Registry Number. Use CAS 3483-12-3.	none listed	none listed	none listed

OSHA Vacated PELs: Dithiothreitol: None listed Deleted Registry Number. Use CAS 3483-12-3.: None listed
 Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a

Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder

Color: white

Odor: stench

pH: 5.1 (10g/l H₂O)

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: 38 - 43 deg C

Decomposition Temperature: Not available

Solubility in water: Freely Soluble

Specific Gravity/Density:

Molecular Formula: C₄H₁₀O₂S₂

Molecular Weight: 154.25

Section 10 - Stability and Reactivity

Chemical Stability: Oxidizes when exposed to air. Material is only slightly hygroscopic. When stored at room temperature, DTT rapidly loses its reducing capability. DTT is not stable when stored in a solution form.

Conditions to Avoid: Light, dust generation, exposure to air, heat.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, oxides of sulfur, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 3483-12-3: EK1610000
CAS# 27565-41-9: XO8576500

LD50/LC50: RTECS: Not available. RTECS: Not available. Other: Oral, rat: LD50 = 400 mg/kg. (Merck)
Dithiothreitol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Carcinogenicity: Deleted Registry Number. Use CAS 3483-12-3. - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: Aviation Regulated Solid, N.O.S.
Hazard Class: 9
UN Number: UN3335
Packing Group:
Canada TDG
Shipping Name: Aviation Regulated Solid, N.O.S.
Hazard Class: 9
UN Number: UN3335
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 22 Harmful if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 3483-12-3: Not available

CAS# 27565-41-9: Not available

Canada

CAS# 3483-12-3 is listed on Canada's DSL List

CAS# 27565-41-9 is listed on Canada's DSL List

Canadian WHMIS Classifications: D2B, D1B

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

CAS# 3483-12-3 is not listed on Canada's Ingredient Disclosure List.

CAS# 27565-41-9 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 3483-12-3 is listed on the TSCA Inventory.

CAS# 27565-41-9 is not listed on the TSCA Inventory. It is for research and development use only.

Section 16 - Other Information

MSDS Creation Date: 8/18/1998

Revision #9 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability 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 the company 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 the company has been advised of the possibility of such damages.
