

## SAFETY DATA SHEET

Version 4.9  
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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1,4-Dithioerythritol

Product Number : D8255

Brand : Sigma-Aldrich

Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich Canada Co.  
 2149 Winston Park Drive  
 OAKVILLE ON L6H 6J8  
 CANADA

Manufacturer : Sigma-Aldrich Corporation  
 3050 Spruce St.  
 St. Louis, Missouri 63103  
 USA

Telephone : +1 9058299500

Fax : +1 9058299292

Emergency Phone # (For both supplier and manufacturer) : 1-800-424-9300

Preparation Information : Sigma-Aldrich Corporation  
 Product Safety - Americas Region  
 1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### Target Organs

Central nervous system

#### WHMIS Classification

Not controlled.

Not a hazardous substance or mixture.

#### HMIS Classification

Health hazard: 0

Chronic Health Hazard: \*

Flammability: 0

Physical hazards: 0

#### Potential Health Effects

**Inhalation** : May be harmful if inhaled. May cause respiratory tract irritation.

**Skin** : May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** : May cause eye irritation.

**Ingestion** : May be harmful if swallowed.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Cleland's reagent  
 DTE  
*erythro*-2,3-Dihydroxy-1,4-butanedithiol  
*erythro*-1,4-Dimercapto-2,3-butanediol

Formula : C<sub>4</sub>H<sub>10</sub>O<sub>2</sub>S<sub>2</sub>

Molecular weight : 154.25 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>(R*,S*)-1,4-Dimercaptobutane-2,3-diol</b>			
6892-68-8	229-998-8	-	<=100%

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#### 4. FIRST AID MEASURES

##### General advice

Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

##### In case of skin contact

Wash off with soap and plenty of water.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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#### 5. FIREFIGHTING MEASURES

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

##### Hazardous combustion products

##### Explosion data - sensitivity to mechanical impact

No data available

##### Explosion data - sensitivity to static discharge

No data available

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#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Avoid dust formation. Avoid breathing vapours, mist or gas.

##### Environmental precautions

No special environmental precautions required.

##### Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

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#### 7. HANDLING AND STORAGE

##### Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

##### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Stench. Keep in a dry place.

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#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Personal protective equipment

###### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Hand 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Eye protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

### Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Hygiene measures

General industrial hygiene practice.

### Specific engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form powder

Colour white

### Safety data

pH 4.5 - 6.5 at 15.4 g/l at 25 °C (77 °F)

Melting point/freezing point Melting point/range: 82 - 84 °C (180 - 183 °F) - lit.

Boiling point No data available

Flash point No data available

Ignition temperature No data available

Auto-ignition temperature No data available

Lower explosion limit No data available

Upper explosion limit No data available

Vapour pressure No data available

Density No data available

Water solubility ca.15.4 g/l at 20 °C (68 °F)

Partition coefficient: No data available

n-octanol/water	
Relative vapour density	No data available
Odour	No data available
Odour Threshold	No data available
Evaporation rate	No data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No data available

### Conditions to avoid

No data available

### Materials to avoid

Bases, Oxidizing agents, Reducing agents, Alkali metals

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Other decomposition products - No data available

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

No data available

#### Inhalation LC50

No data available

#### Dermal LD50

No data available

#### Other information on acute toxicity

LD50 Intramuscular - Mouse - 309 mg/kg

Remarks: Behavioral:Convulsions or effect on seizure threshold.

### Skin corrosion/irritation

No data available

### Serious eye damage/eye irritation

No data available

### Respiratory or skin sensitisation

No data available

### Germ cell mutagenicity

Genotoxicity in vitro - Human - lymphocyte

Cytogenetic analysis

### 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.

### Reproductive toxicity

No data available

### Teratogenicity

No data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

No data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

No data available

**Aspiration hazard**

No data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Nausea, Headache, Vomiting, Central nervous system depression

**Synergistic effects**

No data available

**Additional Information**

RTECS: KF2410000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

No data available

**Persistence and degradability**

No data available

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**PBT and vPvB assessment**

No data available

**Other adverse effects**

No data available

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**13. DISPOSAL CONSIDERATIONS**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 3335 Class: 9

Proper shipping name: A Aviation regulated solid, n.o.s. ((R\*,S\*)-1,4-Dimercaptobutane-2,3-diol)

Reportable Quantity (RQ):

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

Not dangerous goods

Sigma-Aldrich - D8255

**IATA**

UN number: 3335 Class: 9

Packing group: III

Proper shipping name: Aviation regulated solid, n.o.s. ((R\*,S\*)-1,4-Dimercaptobutane-2,3-diol)

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**15. REGULATORY INFORMATION****WHMIS Classification**

Not controlled.

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

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**16. OTHER INFORMATION****Further information**

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