



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name: 2-Mercaptoethanol, for electrophoresis, >= 98%
Product Number: M7154
Brand: Sigma Chemical
Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Substance Name: 2-MERCAPTOETHANOL
CAS #: 60-24-2
SARA 313 NO
Formula: C2H6OS
Synonyms: Emery 5791, 1-Ethanol-2-thiol, Ethylene glycol, monothio-, 2-Hydroxy-1-ethanethiol, 2-Hydroxyethyl mercaptan, 2-ME, Mercaptoethanol, beta-Mercaptoethanol, 2-Mercaptoethanol, Monothioethyleneglycol, 2-Thioethanol, Thiomonoglycol, USAF EK-4196

Section 3 - Hazards Identification

Emergency Overview: Highly Toxic (USA) Toxic (EU)
Toxic in contact with skin. Harmful by inhalation and if swallowed. Irritating to eyes and respiratory system. Risk of serious damage to eyes.
Readily absorbed through skin. Combustible liquid. Stench.
HMIS Rating: Health: 3, Flammability: 2, Reactivity: 1
NFPA Rating: Health: 3, Flammability: 2, Reactivity: 1
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.
Inhalation Exposure: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flash Point: 170.6 °F, 77 °C
Exposure Limits: Lower: 2.3 %, Upper: 18 %
Autoignition Temp: 295 °C
Extinguishing Media: Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.
Suitable:
Firefighting:
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill: Evacuate area.
Procedure(s) of Personal Precaution(s): Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up: Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling: User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage: Suitable: Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.
Special Requirements: Moisture sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls: Safety shower and eye bath. Use only in a chemical fume hood.
Personal Protective Equipment: Respiratory: Government approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

General Hygiene Measures
Wash contaminated clothing before reuse. Wash thoroughly after handling.

Exposure Limits
Country
USA
Value
10 ppm

Section 9 - Physical/Chemical Properties

Appearance	Physical State	Color	Odor
Liquid	Colorless		Stench.
Molecular Weight:	78.13 AMU		
Property	Value	At Temperature or Pressure	
pH	4 - 6	20 °C	
BP/BP Range	157 °C	760 mmHg	
MP/MP Range	< -50 °C		
Freezing Point	N/A		
Vapor Pressure	0.76 mbar	20 °C	
Vapor Density	2.69 g/l		
Saturated Vapor Conc.	N/A		
SG/Density	1.115 g/cm ³		
Bulk Density	N/A		
Odor Threshold	N/A		
Volatiles%	N/A		
VOC Content	N/A		
Water Content	N/A		
Solvent Content	N/A		
Evaporation Rate	N/A		
Viscosity	N/A		
Partition Coefficient	N/A		
Decomposition Temp.	N/A		
Flash Point °F	170.6 °F		Method: closed cup
Flash Point °C	77 °C		Method: closed cup
Explosion Limits	Lower: 2.3 % Upper: 18 %		
Flammability	N/A		
Autoignition Temp	295 °C		
Refractive Index	1.301	760 mmHg	
Solubility	Solubility in Water: 0.5 M in H ₂ O, 20°C, complete, colorless		
N/A = not available			

Section 10 - Stability and Reactivity

Stability
Stable
Stable
Conditions to Avoid
Sensitive to moisture
Materials to Avoid
Avoid contact with metals.
Hazardous Decomposition Products
Sulfur oxides, Carbon monoxide, Carbon dioxide

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.
Skin Absorption
Toxic if absorbed through skin. Readily absorbed through skin.
Eye Contact
Causes severe eye irritation.
Inhalation
Harmful if inhaled.
Ingestion
Harmful if swallowed.

Signs and Symptoms of Exposure
Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure may cause: Weakness, Nausea, Unconsciousness.

RTECS Number: KL3600000

Toxicity Data
Oral - Rat: 244 mg/kg (LD50)
Remarks: Behavioral:Excitement; Behavioral:Muscle contraction or spasticity; Lungs: Thorax, or Respiration:Respiratory depression.
Oral - Mouse: 190 mg/kg (LD50)
Remarks: Behavioral:Excitement; Behavioral:Muscle contraction or spasticity; Lungs: Thorax, or Respiration:Respiratory depression.
Inhalation - Mouse: 13,200 mg/m³ (LC50)
Remarks: Lungs: Thorax, or Respiration:Respiratory depression.
Intraperitoneal - Mouse: 200 MG/KG (LD50)
Skin - Rabbit: 150 UL/KG (LD50)
Skin - Guinea pig: 300 UL/KG (LD50)

Irritation Data
Skin - Rabbit: 10 mg 24h
Remarks: Open irritation test
Eyes - Rabbit: 2 mg
Remarks: Severe irritation effect

Chronic Exposure - Mutagen

Species	Dose	Cell Type	Mutation Test
Rat	1 MMOL/L	liver	DNA inhibition
Mouse	100 MG/L	Other cell types	Micronucleus test
Mouse	30 MMOL/L	Other cell types	Unscheduled DNA synthesis

Section 12 - Ecological Information

No data available.
Acute Ecotoxicity Tests
LC50 Fish

Species	
Leuciscus idus	
Time:	Value:
96.0 h	> 46 mg/l
Test Type	
EC50 Daphnia	
Species	
Daphnia	Value:
Time:	48.0 h
Test Type	
EC50 Algae	
Time:	Value:
72.0 h	12 mg/l
Test Type	
LC50 Bacteria	
Time:	Value:
17 h	125 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
 Contract a licensed professional waste disposal service to dispose of this material.
 This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.
 Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Thioglycol
UN#: 2966
Class: 6.1
Packing Group: Packing Group II
Hazard Label: Toxic substances
PIH: Not PIH

IATA
Proper Shipping Name: Thioglycol
IATA UN Number: 2966
Hazard Class: 6.1
Packing Group: II

Section 15 - Regulatory Information

EU Additional Classification
Symbol of Danger: T N
Indication of Danger
 Toxic, Dangerous for the environment.
Risk Statements
 R: 22 24 34 51/53
 Harmful if swallowed. Toxic in contact with skin. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Statements
 S: 26 36/37/39 45 61
 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text
Indication of Danger
 Highly Toxic (USA) Toxic (EU).
Risk Statements
 Toxic in contact with skin. Harmful by inhalation and if swallowed. Irritating to eyes and respiratory system. Risk of serious damage

to eyes.
Safety Statements
 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements
 Readily absorbed through skin. Combustible liquid. Stenchi.

United States Regulatory Information
 SARA Listed: No

TSCA Inventory Item: Yes Yes

Canada Regulatory Information

WHMIS Classification
 This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

Disclaimer
 For R&D use only. Not for drug, household or other uses.

Warranty
 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2003 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.