

# SAFETY DATA SHEET

Creation Date 10-May-2010

Revision Date 22-December-2025

Revision Number 7

This safety data sheet was created pursuant to the requirements of: Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) - SOR 2022-272

## 1. Identification

**Product Name** 2-Mercaptoethanol

**Cat No. :** A15890

**CAS-No** 60-24-2  
**Synonyms** 2-Hydroxy-1-ethanethiol; Thioglycol

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

#### **WHMIS 2015 Classification**

This product is hazardous in accordance with the Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended (SOR/2022-272)

|   |             |
|---|-------------|
| <b>Flammable liquids</b>                                    | Category 4  |
| <b>Acute oral toxicity</b>                                  | Category 3  |
| <b>Acute dermal toxicity</b>                                | Category 2  |
| <b>Acute Inhalation Toxicity</b>                            | Category 3  |
| <b>Skin Corrosion/Irritation</b>                            | Category 2  |
| <b>Serious Eye Damage/Eye Irritation</b>                    | Category 1  |
| <b>Skin Sensitization</b>                                   | Category 1A |
| <b>Reproductive Toxicity</b>                                | Category 2  |
| <b>Specific target organ toxicity - (repeated exposure)</b> | Category 2  |
| Target Organs - Liver, Heart.                               |             |

### Label Elements

**Signal Word**

Danger

**Hazard Statements**

Combustible liquid  
 Fatal in contact with skin  
 Toxic if swallowed or if inhaled  
 Causes skin irritation  
 May cause an allergic skin reaction  
 Causes serious eye damage  
 Suspected of damaging fertility  
 May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
 Do not breathe dust/fumes/gas/mist/vapours/spray  
 Do not get in eyes, on skin, or on clothing  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Use only outdoors or in a well-ventilated area  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF ON SKIN: Wash with plenty of soap and water  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER/doctor  
 Rinse mouth  
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
 Take off immediately all contaminated clothing and wash it before reuse

**Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Very toxic to aquatic organisms  
 Toxic to aquatic life with long lasting effects  
 Stench

### 3. Composition/Information on Ingredients

| Component               | CAS-No    | Weight % |
|-------------------------|-----------|----------|
| 2-Mercaptoethanol       | 60-24-2   | <100     |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | <0.25    |

## 4. First-aid measures

|  |   |
|--|---|
| <b>General Advice</b>                  | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.   |
| <b>Eye Contact</b>                     | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  |
| <b>Skin Contact</b>                    | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.   |
| <b>Inhalation</b>                      | Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.                                      |
| <b>Ingestion</b>                       | Do NOT induce vomiting. Call a physician or poison control center immediately.  |
| <b>Most important symptoms/effects</b> | None reasonably foreseeable. Causes severe eye damage. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting |
| <b>Notes to Physician</b>              | Treat symptomatically   |

## 5. Fire-fighting measures

|   |   |
|---|---|
| <b>Suitable Extinguishing Media</b>     | Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers. |
| <b>Unsuitable Extinguishing Media</b>   | No information available  |
| <b>Flash Point</b>                      | 73 °C / 163.4 °F  |
| <b>Method -</b>                         | No information available  |
| <b>Autoignition Temperature</b>         | 295 °C / 563 °F   |
| <b>Explosion Limits</b>                 |   |
| <b>Upper</b>                            | 2.7 vol %   |
| <b>Lower</b>                            | 1.1 vol %   |
| <b>Sensitivity to Mechanical Impact</b> | No information available  |
| <b>Sensitivity to Static Discharge</b>  | No information available  |

### Specific Hazards Arising from the Chemical

Combustible material. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating gases and vapors. Do not allow run-off from fire-fighting to enter drains or water courses.

### Hazardous Combustion Products

Sulfur oxides. Sulfides.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

**Health**  
4

**Flammability**  
2

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|   |  |
|---|--|
| <b>Personal Precautions</b>                 | Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b>            | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.          |
| <b>Methods for Containment and Clean Up</b> | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition.   |

## 7. Handling and storage

|                 |   |
|-----------------|---|
| <b>Handling</b> | Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. |
| <b>Storage.</b> | Keep refrigerated. Keep away from heat, sparks and flame. Incompatible Materials. Oxidizing agent. Acids. Strong bases.   |

## 8. Exposure controls / personal protection

|                                   |  |
|-----------------------------------|--|
| <b><u>Exposure Guidelines</u></b> | This product does not contain any hazardous materials with occupational exposure limit established by the region specific regulatory bodies. |
|-----------------------------------|--|

|                                    |   |
|------------------------------------|---|
| <b><u>Engineering Measures</u></b> | Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.<br>Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source |
|------------------------------------|---|

### **Personal protective equipment**

|                        |                   |
|------------------------|-------------------|
| <b>Eye Protection</b>  | Goggles           |
| <b>Hand Protection</b> | Protective gloves |

| Glove material | Breakthrough time | Glove thickness | Glove comments         |
|----------------|-------------------|-----------------|------------------------|
| Nitrile rubber | See manufacturers | -               | Splash protection only |
| Neoprene       | recommendations   |                 |                        |
| Natural rubber |                   |                 |                        |
| PVC            |                   |                 |                        |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

### **Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly  
**Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

### **Environmental exposure controls**

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

### **Appearance**

**Physical State** Liquid  
**Color** Light yellow  
**Odor** Stench  
**Odor Threshold** No information available

### **Property**

|  | <b>Values</b>                          | <b>Remarks</b> | <b>Method</b>                            |
|--|--|----------------|--|
| <b>Melting Point/Range</b>                     | -100 °C / -148 °F                      |                |  |
| <b>Softening Point</b>                         | No data available                      |                |  |
| <b>Boiling Point/Range</b>                     | 157 - 158 °C / 314.6 - 316.4 °F        |                |  |
| <b>Flash Point</b>                             | 73 °C / 163.4 °F                       |                | <b>Method</b> - No information available |
| <b>Flammability (liquid)</b>                   | Combustible liquid                     |                | On basis of test data                    |
| <b>Flammability (solid,gas)</b>                | Not applicable                         |                | Liquid                                   |
| <b>Explosion Limits</b>                        | <b>Lower</b> 2.3<br><b>Upper</b> 18    |                |  |
| <b>Autoignition Temperature</b>                | 295 °C / 563 °F                        |                |  |
| <b>Decomposition Temperature</b>               | > 157°C                                |                |  |
| <b>pH</b>                                      | 5.2                                    | (0.1M)         |  |
| <b>Viscosity</b>                               | 3.43 cP at 20 °C                       |                |  |
| <b>Water Solubility</b>                        | Soluble                                |                |  |
| <b>Solubility in other solvents</b>            | No information available               |                |  |
| <b>Partition Coefficient (n-octanol/water)</b> |  |                |  |
| <b>Component</b>                               | <b>log Pow</b>                         |                |  |
| 2-Mercaptoethanol                              | -0.056                                 |                |  |
| Ethanol, 2,2-dithiobis-                        | -0.3                                   |                |  |
| <b>Vapor Pressure</b>                          | 1 mmHg @ 20 °C                         |                |  |
| <b>Density / Specific Gravity</b>              | 1.110                                  |                |  |
| <b>Bulk Density</b>                            | Not applicable                         | Liquid         |  |
| <b>Vapor Density</b>                           | 2.69                                   | (Air = 1.0)    |  |
| <b>Particle characteristics</b>                | (liquid) Not applicable                |                |  |
| <b>Other Information</b>                       |  |                |  |
| <b>Molecular Formula</b>                       | C2 H6 O S                              |                |  |
| <b>Molecular Weight</b>                        | 78.13                                  |                |  |
| <b>Explosive Properties</b>                    | explosive air/vapour mixtures possible |                |  |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions. Water reactive.

|   |  |
|---|--|
| <b>Conditions to Avoid</b>              | Incompatible products. Heat, flames and sparks. Excess heat. Exposure to moist air or water. Keep away from open flames, hot surfaces and sources of ignition. |
| <b>Incompatible Materials</b>           | Oxidizing agent, Acids, Strong bases   |
| <b>Hazardous Decomposition Products</b> | Sulfur oxides, Sulfides  |
| <b>Hazardous Polymerization</b>         | No information available.  |
| <b>Hazardous Reactions</b>              | None under normal processing.  |

## 11. Toxicological information

### Information on expected route of exposure

|                   |   |
|-------------------|---|
| <b>Inhalation</b> | May produce an allergic reaction.   |
| <b>Ingestion</b>  | May cause allergic reaction. May be harmful if swallowed.   |
| <b>Eyes</b>       | Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. May cause irritation. Sensitization.  |
| <b>Skin</b>       | Avoid contact with skin. Skin Corrosion/Irritation. May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Harmful in contact with skin. |

### Toxicology data for the components

| Component               | LD50 Oral                | LD50 Dermal  | LC50 Inhalation |
|-------------------------|--------------------------|--|-----------------|
| 2-Mercaptoethanol       | LD50 = 244 mg/kg ( Rat ) | 150 µL/kg ( Rabbit )<br>112 - 224 mg/kg ( Rabbit ) | -               |
| Ethanol, 2,2-dithiobis- | LD50 = 173 mg/kg ( Rat ) | -  | -               |

|   |   |
|---|---|
| <b>Toxicologically Synergistic Products</b>   | No information available  |
| <b>(b) skin corrosion/irritation;</b>         | Category 2  |
| <b>(c) serious eye damage/irritation;</b>     | Category 1  |
| <b>(d) respiratory or skin sensitization;</b> |   |
| <b>Respiratory</b>                            | Based on available data, the classification criteria are not met                        |
| <b>Skin</b>                                   | Sub-category 1A   |
|   | No information available  |
| <b>(e) germ cell mutagenicity;</b>            | Based on available data, the classification criteria are not met                        |
| <b>(f) carcinogenicity;</b>                   | Based on available data, the classification criteria are not met                        |
|   | The table below indicates whether each agency has listed any ingredient as a carcinogen |

| Component               | CAS-No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-------------------------|-----------|------------|------------|------------|------------|------------|
| 2-Mercaptoethanol       | 60-24-2   | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

|                                   |  |
|-----------------------------------|--|
| <b>(g) reproductive toxicity;</b> | Category 2   |
| <b>(h) STOT-single exposure;</b>  | Based on available data, the classification criteria are not met |

- (i) STOT-repeated exposure; Category 2  
 Target Organs Liver, Heart.
- (j) aspiration hazard; Based on available data, the classification criteria are not met
- Symptoms / effects, both acute and delayed** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
- Other Adverse Effects** The toxicological properties have not been fully investigated.
- Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms.

| Component         | Freshwater Algae                                  | Freshwater Fish | Microtox                                   | Water Flea                                |
|-------------------|---|-----------------|--|---|
| 2-Mercaptoethanol | EC50: = 12 mg/L, 72h<br>(Desmodesmus subspicatus) | Not listed      | = 125 mg/L EC50<br>Pseudomonas putida 17 h | EC50: = 1.52 mg/L, 48h<br>(Daphnia magna) |

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

| Component               | log Pow |
|-------------------------|---------|
| 2-Mercaptoethanol       | -0.056  |
| Ethanol, 2,2-dithiobis- | -0.3    |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

UN-No UN2966  
 Proper Shipping Name THIOGLYCOL  
 Hazard Class 6.1  
 Packing Group II

### TDG

UN-No UN2966  
 Proper Shipping Name THIOGLYCOL  
 Hazard Class 6.1  
 Packing Group II

### IATA

UN-No UN2966  
 Proper Shipping Name THIOGLYCOL  
 Hazard Class 6.1  
 Packing Group II

### IMDG/IMO

|                      |            |
|----------------------|------------|
| UN-No                | UN2966     |
| Proper Shipping Name | THIOGLYCOL |
| Hazard Class         | 6.1        |
| Packing Group        | II         |

## 15. Regulatory information

### International Inventories

| Component               | CAS-No    | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS    | ELINCS | NLP |
|-------------------------|-----------|-----|------|------|---|-----------|--------|-----|
| 2-Mercaptoethanol       | 60-24-2   | X   | -    | X    | ACTIVE  | 200-464-6 | -      | -   |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | -   | X    | X    | ACTIVE  | 217-576-6 | -      | -   |

| Component               | CAS-No    | IECSC | KECL     | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|-------------------------|-----------|-------|----------|------|------|------|------|-------|-------|
| 2-Mercaptoethanol       | 60-24-2   | X     | KE-23095 | X    | X    | X    | X    | X     | X     |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | X     | KE-12729 | -    | -    | X    | X    | X     | X     |

#### Legend:

X - Listed '-' - Not listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and its amendments and meets the requirements of the HPR (Paragraph 13(1)(a) of the revised Hazardous Products Act (HPA)).

### Other International Regulations

**Authorisation/Restrictions according to EU REACH** Not applicable

### Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

### Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component               | CAS-No    | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|-------------------------|-----------|----------------|------------------------------|---------------------------|--|
| 2-Mercaptoethanol       | 60-24-2   | Listed         | Not applicable               | Not applicable            | Not applicable                             |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

| Component               | CAS-No    | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|-------------------------|-----------|---|--|----------------------------|------------------------------------|
| 2-Mercaptoethanol       | 60-24-2   | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |
| Ethanol, 2,2-dithiobis- | 1892-29-1 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

**16. Other information**

|                         |   |
|-------------------------|---|
| <b>Prepared By</b>      | Product Safety Department<br>Email: chem.techinfo@thermofisher.com<br>www.thermofisher.com  |
| <b>Creation Date</b>    | 10-May-2010   |
| <b>Revision Date</b>    | 22-December-2025  |
| <b>Print Date</b>       | 22-December-2025  |
| <b>Revision Summary</b> | This document has been updated to comply with the requirements of WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR) to align with the Globally Harmonised System (GHS) (V7/8) for the Classification and Labelling of Chemicals. |

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**