

MATERIAL SAFETY DATA SHEET



Conforms to 93/112/EC and ISO 11014-1

1. Chemical Product and Company Identification

Product Name: 2-Mercaptoethanol

Product Number: EC-603

Chemical Names/

Thioglycol; 2-Thioethanol, 2-Hydroxyethyl mercaptan;

Description:

Monothioethylene glycol

Manufacturer

National Diagnostics
305 Patton Drive
Atlanta, GA 30336

Telephone Numbers

(800) 526-3867
(404) 699-2121

Emergency Numbers

Chemtrec

(800) 424-9300 (U.S. & Canada)
01-703-527-3887 (outside U.S. & Canada)

2. Composition/Information on Ingredients

Component	% Comp.	CAS #	EINECS #	TLV (Units)
2-Mercaptoethanol	100	60-24-2	200-464-6	Not Established

EEC LABEL SYMBOL AND CLASSIFICATION



R: 22-23/24-36

Harmful if swallowed. Toxic by inhalation and in contact with skin. Irritating to the eyes.

S: 24/25-26-36/37/

Avoid contact with skin and eyes. 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).

3. Hazards Identification

Appearance and Odor

Clear, colorless liquid with strong stench.

EMERGENCY OVERVIEW - IMMEDIATE HAZARD

DANGER! MAY BE FATAL IF ABSORBED THROUGH SKIN. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. Health hazards given on this data sheet apply to concentrated solutions of mercaptoethanol or the substance in its pure form. Hazards of dilute solutions may be reduced, depending upon the concentration. Degree of hazard for these reduced concentrations is not currently addressed in the available literature.

EMERGENCY OVERVIEW - CHRONIC HAZARD WARNING:

NO INFORMATION FOUND ON THE CHRONIC HAZARDS OF MERCAPTOETHANOL.

Potential Health Effects

Inhalation

Vapors irritate the mucous membranes and respiratory tract.

Ingestion

Toxic. Harmful if swallowed. Sore throat, abdominal pain and vomiting may occur.

Skin

Toxic. Causes skin irritation and may be absorbed in the body in toxic quantities.

Eyes

Vapors irritate the eyes with redness and pain. Splashes may cause severe irritation.

Signs and Symptoms of Overexposure

Inhalation

Symptoms may include coughing, sore throat, shortness of breath, head ache, nausea, and vomiting. Prolonged exposure can cause CNS stimulation.

Ingestion

Symptoms may include sore throat, abdominal pain, and vomiting.

Skin

Symptoms may include skin irritation.

Eyes

Symptoms may include redness and pain.

Carcinogenicity

Substance is neither a known nor an anticipated carcinogen. Not listed by NTP, IARC, or OSHA.

Mutagenicity

No information available.

Reproductive Toxicity

No information available.

Teratogenic Effects

No information available.

Routes of Entry

Toxic effects possible by inhalation, ingestion, and skin absorption.

Target Organ Statement

Behavioral: Tremor, convulsion, excitement, muscle contraction/spasticity. Lungs, thorax: Respiratory depression. GI: Changes in structure/function of salivary glands.

4. First Aid Measures

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an

unconscious person. Call a physician.

Skin

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Flash Point	74C (165F)	Flammable Limits	l _{el} : 2.3%; u _{el} 18%
Flash Point Method	OC	Autoignition temperature	Not Available

Extinguishing media

Dry powder, foam, carbon dioxide. (Water may be ineffective.)

Protective Equipment

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

Hazardous Combustion Products

Highly toxic gases may be involved in fires of this product.

Unusual Fire and Explosion Hazards

Combustible Liquid and Vapor!

NFPA Codes: Health 3 Flammability 2 Reactivity 0

6. Accidental Release Measures

Steps to be taken in case material is released or spilled

Eliminate source of ignition. Ventilate area. Cover with absorbent material (soda ash) to confine spill and sweep or shovel into container. Close container tightly. Avoid breathing vapors.

Waste Disposal Method

Disposal must be made in accordance with applicable federal, state, and local regulations.

Personal Precautions

Wear appropriate protective equipment as specified in section 8.

7. Handling and Storage

Handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Transfer methods should avoid static sparks. Use explosion proof ventilation.

Storage

Keep in a tightly closed container, stored in a cooled, dry, ventilated area away from sources of heat or ignition. Protect from physical damage. Isolate from incompatible materials (section 10).

Storage Temperature

4 C

Disposal

Observe all national, state, and local regulations regarding product disposal. Containers of this material

may be hazardous when empty since they retain product residues (vapors, liquids).

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

Component: 2-Mercaptoethanol

ACGIH Threshold Limit Value (TLV): Not Established

OSHA Permissible Exposure Limit (PEL): AIHA WEEL 0.2ppm, 8 hr. TWA

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborn Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

Respiratory Protection

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. This substance has questionable warning properties.

Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Other Control Measures

There is insufficient data in the published literature to assign complete numerical safety ratings and laboratory protective equipment for this product. Special precautions must be used in storage, use and handling.

9. Physical Properties

Boiling point	157C (315F)	Evaporation Rate	No information found
Melting point	-100C (-148F)	Solubility in water	Miscible in water
Vapor pressure (mmHg)	1 @ 20C (68F)	pH	No information found
Vapor density (Air = 1)	2.7	Specific gravity (H2O = 1)	1.114
% Volatile by volume	100		

10. Stability and Reactivity

Stability

Stable under ordinary conditions of use and storage. Decomposes under the influence of moisture, water, and acids, forming toxic and combustible gas (hydrogen sulfide).

Conditions to Avoid

Heat, ignition sources, moisture, incompatibles.

Hazardous Decomposition Products

Burning may produce sulfur oxides.

Hazardous Polymerization

Will not occur

Incompatibles

2-Mercaptoethanol:

Oxidizing agents, moisture, Avoid contact with metals.

11. Toxicological Information

Product LD50 Values

2-Mercaptoethanol	Oral Rat LD50 (mg/kg):	244
2-Mercaptoethanol	Dermal Rabbit LD50 (mg/kg):	150

Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
2-Mercaptoethanol	No	No	None

12. Ecological Information

2-Mercaptoethanol

When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may biodegrade to a moderate extent. This material has a log octanol-water partition coefficient of less than 3.0. This material has an estimated bioconcentration factor (BCF) of less than 100. Volatilization, adsorption and bioconcentration are not expected to be important environmental fate processes. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to exist in the aerosol phase with a short half-life. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.

13. Disposal Considerations

Observe all national, state, and local regulations regarding product disposal. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids).

14. Transport Information

D.O.T.

Proper Shipping Name: Thioglycol

Hazard Class: 6.1

UN Number: 2966

Packing Group: 2

I.A.T.A.

Proper Shipping Name: Thioglycol

Hazard Class: 6.1

UN Number: 2966

Packing Group: 2

I.M.O.

Proper Shipping Name: Thioglycol

Hazard Class: 6.1

UN Number: 2966

Packing Group: 2

15. Regulatory Information

United States

TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
2-Mercaptoethanol	Yes	No	No	Yes	No

Europe

EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

EEC LABEL SYMBOL AND CLASSIFICATION



R: 22-23/24-36

Harmful if swallowed. Toxic by inhalation and in contact with skin. Irritating to the eyes.

S: 24/25-26-36/37/

Avoid contact with skin and eyes. 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).

16. Other Information

NFPA Codes: Health 3 Flammability 2 Reactivity 0

MANUFACTURER DISCLAIMER: The information given herein is offered in good faith as accurate, but without guarantee. Conditions of the use and suitability of the product for particular uses are beyond our control. All risks of use of the product are therefore assumed by the user. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.