

# SAFETY DATA SHEET



Conforms to regulation (EC) no. EU 453/2010

## SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

**Product Name:** 2-Mercaptoethanol

**Product Number:** EC-603

### 1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

### 1.3 Details of the Supplier of the Safety Data Sheet

#### Manufacturer

National Diagnostics  
305 Patton Drive  
Atlanta, GA 30036  
(404) 699-2121  
(800) 526-3867  
info@nationaldiagnostics.com

### 1.4 Emergency Telephone Number

#### ChemTel Inc.

Contract number MIS8894340  
1-800 255-3924 (United States, Canada, Puerto Rico & US Virgin Islands)  
01-800-099-0731 (Mexico)  
400-120-0751 (China)  
000-800-100-4086 (India)  
1-300-954-583 (Australia)  
0-800-591-6042 (Brazil)  
+1-813-255-3924 (All other regions)

## SECTION 2 - HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H301 - Acute Toxicity-Oral (Category 3)  
H310 - Acute Toxicity-Dermal (Category 2)  
H315 - Skin Corrosion/Irritation (Category 2)  
H317 - Skin Sensitizer (Category 1)  
H318 - Serious Eye Damage/Eye Irritation (Category 1)  
H331 - Acute Toxicity-Inhalation (Category 3)  
H373 - Specific Target Organ Toxicity Following Repeated Exposure (Category 2)  
H400 - Acute Hazards to the Aquatic Environment (Category 1)  
H410 - Chronic Hazards to the Aquatic Environment (Category 1)

### 2.2 Label Elements

#### GHS LABEL ELEMENTS AND CLASSIFICATION

##### GHS Label Elements



#### DANGER

H301 - Toxic if swallowed  
H310 - Fatal in contact with skin.  
H331 - Toxic if inhaled.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.



H373 - May cause damage to organs through prolonged or repeated exposure.  
H400 - Very toxic to aquatic life.  
H410 - Very toxic to aquatic life with long lasting effects.  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician .  
P302+P350 - IF ON SKIN: Gently wash with plenty of soap and water.  
P308+P360 - IF ON CLOTHING: Rinse immediately contaminated CLOTHING and SKIN with plenty of water before removing clothes.

### 2.3 Other Hazards

None found.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance

#### Chemical Names/Description

Thioglycol; 2-Thioethanol, 2-Hydroxyethyl mercaptan; Monothioethylene glycol

#### Chemical Formula

C<sub>2</sub>H<sub>6</sub>OS

### Component List

Component	% Comp.	CAS #	EC #
2-Mercaptoethanol	100	60-24-2	200-464-6

## SECTION 4 - FIRST AID MEASURES

### 4.1 Description of 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.

### 4.2 Most Important Symptoms and Effects, Both Acute and Delayed

#### Inhalation

Symptoms may include coughing, sore throat, shortness of breath, headaches, 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.

### 4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed

Unknown/not applicable

## **SECTION 5 - FIRE FIGHTING MEASURES**

### **5.1 Extinguishing media**

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

### **5.2 Special Hazards Arising from the Substance/Mixture**

#### **Hazardous Combustion Products**

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

#### **Hazardous Decomposition Products**

Burning may produce sulfur oxides.

#### **Hazardous Polymerization**

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

### **5.3 Advice for Firefighters**

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.

### **5.4 Further Information**

No data available.

## **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal Precautions**

Wear appropriate protective equipment as specified in Section 8.

### **6.2 Environmental Precautions**

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

### **6.3 Methods and Materials for Containment and Cleaning Up**

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.

### **6.4 References to Other Sections**

For disposal information see Section 13. For protective clothing and equipment see Section 8.

## **SECTION 7 - HANDLING AND STORAGE**

### **7.1 Precautions for Safe 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.

### **7.2 Conditions for Safe Storage (including any incompatibles)**

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).

#### **Incompatibles**

Oxidizing agents, moisture, Avoid contact with metals.

### **7.3 Specific End Uses**

Investigational research by professional users

## **SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS**

### **8.1 Control Parameters**

#### **ACGIH Threshold Limit Value (TLV):**

Not Established

#### **OSHA Permissible Exposure Limit (PEL):**

AIHA WEEL 0.2ppm, 8 hr. TWA

### **8.2 Exposure Controls**

#### **Engineering Controls**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne 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, airtight 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.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical & Chemical Properties

a. Appearance	Clear, colorless liquid	b. Odor	Strong stench
c. Odor Threshold	~1ppm	d. pH	No information found
e. Melting/Freezing Point (°C)	-100C (-148F)	f. Boiling point (°C)	157°C (315F)
g. Flash Point (°C)	74	h. Evaporation Rate	No information found
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	lcl: 2.3%; uel 18%
k. Vapor Pressure	1 @ 20C (68F)	l. Vapor Density (Air = 1)	2.7
m. Relative Density	1.114	n. Water Solubility	Miscible in water
o. Partition Coefficient n-octanol/water	log Pow 0.029	p. Autoignition Temperature (°C)	295°C
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.
s. Explosive Properties	N.A.	t. Oxidizing Properties	Not an oxidizer

## SECTION 10 - STABILITY AND REACTIVITY

### 10.1 Reactivity

Reducing agent- will react with oxidizers.

### 10.2 Chemical 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).

### 10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

### 10.4 Conditions to Avoid

Heat, ignition sources, moisture, incompatibles.

### 10.5 Incompatible Materials

Oxidizing agents, moisture, Avoid contact with metals.

### 10.6 Hazardous Decomposition Products

Burning may produce sulfur oxides.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Product LD50 Values

#### Oral Rat LD50 (mg/kg)

244

#### Dermal Rabbit LD50 (mg/kg)

150

### Component Cancer List Status

NTP Carcinogen

	Known	Anticipated	IARC Category
2-Mercaptoethanol	No	No	None

## 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.

## 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.

## SECTION 12 - ECOLOGICAL INFORMATION

### 12.1 Toxicity

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (96hr, golden orfe) 37 mg/L	EC50 (daphnia, 48 hr) 0.4 mg/L	LC50 (96h) : 19 mg/L	EC50 (17 h) : 113 mg/l
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	No data	No data	No data

### 12.2 Persistence and Degradability

Biodegradable (90% in 28 days)

### 12.3 Bioaccumulative Potential

No data

### 12.4 Mobility in Soil

Koc 1.325

### 12.5 Results of PBT and vPvB Assessment

Not a PBT or vPvB

### 12.6 Other Adverse Effects

None

## SECTION 13 - DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

## SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	2966	2966	2966	2966
14.2 Shipping Name	Thioglycol	Thioglycol	Thioglycol	Thioglycol
14.3 Hazard Class	6.1	6.1	6.1	6.1
14.4 Packing Group	II	II	II	II
14.5 Environmental Hazards	N.A.	N.A.	Not regulated	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

## SECTION 15 - REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture 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.

## SECTION 16 - OTHER INFORMATION

### Revisional Updates

8/8/2023 - Updated Section 14.5

4/26/2019 - Updated Section 1.4

5/29/2015 - Updated Sections 2.1 and 3.1

8/12/2013 - Released Version 1.0

### NFPA Codes

Health 3 Flammability 2 Reactivity 0

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