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-Hydroxyetyl mercaptan; Monothioethylene glycol

Chemical Formula
C_2H_6OS

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, 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.

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**	lel: 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 INFOMATION
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.	Marine pollutant	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
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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