

## Material Safety Data Sheet

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Version 1.7

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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1 - Product and Company Information

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Product Name	2-MERCAPTOETHANOL (2ME) (WORLDWIDE EXCEPT NORTH AMERICA)
Product Number	516732
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
Fax	+61 2 9841 0500
Emergency Phone #	+61 2 9841 0566

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
2-MERCAPTOETHANOL	60-24-2	200-464-6	None

  

Formula	C2H6OS
Molecular Weight	78.13 AMU
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

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Harmful if swallowed. Toxic in contact with skin. Causes burns.  
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes.  
Call a physician.

## AFTER EYE CONTACT

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.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES 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.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep container closed. Keep away from heat and open flame.

SPECIAL REQUIREMENTS: Moisture sensitive.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

#### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling. Discard contaminated shoes.

#### EXPOSURE LIMITS

Country	Source	Type	Value
USA			10 ppm

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.  
Hand Protection: Compatible chemical-resistant gloves.  
Eye Protection: Chemical safety goggles.  
Special Protective Measures: Faceshield (8-inch minimum).

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid Color: Colorless Odor: Stench.	
Property	Value	At Temperature or Pressure
pH	4 - 6	20 °C
BP/BP Range	157 °C	760 mmHg
MP/MP Range	< -50 °C	
Flash Point	77 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	295 °C	760 mmHg
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 2.3 % Upper: 18 %	
Vapor Pressure	0.76 mbar	20 °C
SG/Density	1.115 g/cm3	
Partition Coefficient	Log Kow: -0.326	
Viscosity	N/A	
Vapor Density	2.69 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: 0.5 M in H2O, 20°C complete, colorless	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions to Avoid: Sensitive to moisture. Heat.

Materials to Avoid: Oxidizing agents Avoid contact with metals.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Sulfur oxides Carbon monoxide,  
Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: KL5600000

### ACUTE TOXICITY

LD50

Oral

Rat  
244 mg/kg  
Remarks: Behavioral:Excitement. Behavioral:Muscle contraction or spasticity. Lungs, Thorax, or Respiration:Respiratory depression.

LD50  
Oral  
Mouse  
190 mg/kg  
Remarks: Behavioral:Excitement. Behavioral:Muscle contraction or spasticity. Lungs, Thorax, or Respiration:Respiratory depression.

LC50  
Inhalation  
Mouse  
13,200 mg/m3  
Remarks: Lungs, Thorax, or Respiration:Respiratory depression.

LD50  
Intraperitoneal  
Mouse  
200 MG/KG

LD50  
Skin  
Rabbit  
150 UL/KG

LD50  
Skin  
Guinea pig  
300 UL/KG

#### IRRITATION DATA

Skin  
Rabbit  
10 mg  
24H  
Remarks: Open irritation test

Eyes  
Rabbit  
2 mg  
Remarks: Severe irritation effect

#### 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. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

#### ROUTE OF EXPOSURE

Skin Contact: Causes burns.  
Skin Absorption: Toxic if absorbed through skin. Readily absorbed through skin.  
Eye Contact: Causes burns.  
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper

respiratory tract.  
Ingestion: Harmful if swallowed.

#### CHRONIC EXPOSURE - MUTAGEN

Rat

1 MMOL/L

Cell Type: liver

DNA inhibition

Mouse

100 MG/L

Cell Type: Other cell types

Micronucleus test

Mouse

30 MMOL/L

Cell Type: Other cell types

Unscheduled DNA synthesis

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#### 12 - Ecological Information

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##### ELIMINATION

Elimination: 6 %

Classification: Not significantly biodegradable.

##### ECOTOXICOLOGICAL EFFECTS

Test Type: LC50 Fish

Species: Leuciscus idus

Time: 96 h

Value: > 46 mg/l

Test Type: EC50 Daphnia

Species: Daphnia

Time: 48 h

Value: 1.52 mg/l

Test Type: EC50 Algae

Time: 72 h

Value: 12 mg/l

Test Type: LC50 Bacteria

Time: 17 h

Value: 125 mg/l

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#### 13 - Disposal Considerations

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##### SUBSTANCE DISPOSAL

Contact 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.

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#### 14 - Transport Information

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##### RID/ADR

UN#: 2966

Class: 6.1

PG: II

Proper Shipping Name: Thioglycol

## IMDG

UN#: 2966  
Class: 6.1  
PG: II  
Proper Shipping Name: Thioglycol  
Marine Pollutant: No  
Severe Marine Pollutant: No

## IATA

UN#: 2966  
Class: 6.1  
PG: II  
Proper Shipping Name: Thioglycol  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: T N

Toxic. Dangerous for the environment.

R-PHRASES: 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.

S-PHRASES: 26 36/37/39 45 60

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). This material and its container must  
be disposed of as hazardous waste.

### COUNTRY SPECIFIC INFORMATION

#### Germany

WGK: 3

#### SWITZERLAND

SWISS POISON CLASS: 3

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## 16 - Other Information

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### 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. The  
information in this document is based on the present state of our  
knowledge and is applicable to the product with regard to  
appropriate safety precautions. It does not represent any  
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