



SIGMA-ALDRICH

Material Safety Data Sheet

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Section 1 - Product and Company Information

Product Name Ethylene sulfide, 99%
Product Number 128252
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052

Emergency Phone: 314-776-8555

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
ETHYLENE SULFIDE	420-12-2	No	206-993-9	

Formula C₂H₄S
Synonyms Aethylensulfid (German), 2,3-Dihydrothiirene, Ethylene episulfide, Ethylene episulphide, Ethylene sulphide, Thiacyclopropane, Thilrane, Thilrene, 2,3-dihydro-

Section 3 - Hazards Identification

Emergency Overview

Flammable (USA) Highly Flammable (EU). Toxic.
Toxic by inhalation and if swallowed. Risk of serious damage to eyes.

HMIS Rating
Health: 3 Flammability: 3 Reactivity: 0

NFPA Rating
Health: 3 Flammability: 3 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

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

Inhalation Exposure

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

Dermal Exposure

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

Eye Exposure

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.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.
Forms explosive mixtures in air.

Flash Point: 50 °F 10 °C

Autoignition Temp: N/A **Flammability:** Yes

Extinguishing Media

Suitable

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Firefighting

Protective Equipment

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

Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with an activated carbon adsorbent, take up and place in closed containers. Transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Open carefully.

Storage

Suitable

Keep tightly closed. Keep away from heat, sparks, and open flame. Store at 2-8°C

Incompatible Materials

Acids.

Special Requirements
May develop pressure. Open carefully.

Section 8 - Exposure Controls / PPE

Engineering Controls

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

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate: use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Color	Form
	Colorless	Clear liquid
Molecular Weight:	60.12 AMU	
pH	N/A	
BP/BP Range	55 - 56 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	214.555 mmHg	20 °C
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	1.01 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point °F	50 °F	Method: closed cup
Flash Point °C	10 °C	Method: closed cup
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	1.493	

Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

Stability

Materials to Avoid

Strong bases, Strong oxidizing agents, Acids.

Hazardous Decomposition Products

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Sulfur oxides, Hydrogen sulfide gas.

Hazardous Polymerization

Hazardous Polymerization

May polymerize violently in presence of acids, especially when warm..

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

May cause skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes severe eye irritation.

Inhalation

Toxic if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed.

Signs and Symptoms of Exposure

Exposure can cause: Nausea, headache, and vomiting.

RTECS Number: KX3500000

Toxicity Data

Oral - Rat: 178 mg/kg (LD50)

Remarks: Behavioral:General anesthetic.
Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi.
Lungs, Thorax, or Respiration:Respiratory depression.

Inhalation - Rat: 690 ppm (LC50)

Remarks: Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis).
Lungs, Thorax, or Respiration:Acute pulmonary edema.
Blood: Hemorrhage.

Intraperitoneal - Rat: 42 MG/KG (LD50)

Remarks: Peripheral Nerve and Sensation:Flaccid paralysis without anesthesia (usually neuromuscular blockage).
Behavioral:Ataxia.
Lungs, Thorax, or Respiration:Cyanosis.

Subcutaneous - Rat: 90 MG/KG (LD50)

Oral - Mouse: 35.6 mg/kg (LD50)

Remarks: Behavioral:Muscle weakness.
Behavioral:Ataxia.
Behavioral:Muscle contraction or spasticity.

Inhalation - Mouse: 1,400 mg/m3 (LC50)

Remarks: Behavioral:Muscle weakness.
Behavioral:Ataxia.
Behavioral:Muscle contraction or spasticity.

Oral - Mammal: 36 mg/kg (LD50)

Irritation Data

Eyes - Rabbit: 100 mg
Remarks: Severe irritation effect

Chronic Exposure - Carcinogen

Result: This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Rat - Subcutaneous: 400 MG/KG 50W I

Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic: Tumors at site of application.

IARC Carcinogen List

Rating
Group 3

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Flammable liquids, toxic, n.o.s.

UN#: 1992

Class: 3

Packing Group: Packing Group II

Hazard Label: Flammable liquid

Hazard Label: Toxic substances.

PIH: Not PIH

IATA

Proper Shipping Name: Flammable liquid, toxic, n.o.s.

IATA UN Number: 1992

Hazard Class: 3

Packing Group: II

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: F T

Indication of Danger

Highly Flammable. Toxic.

Risk Statements R: 11 23/25 41

Highly flammable. Toxic by inhalation and if swallowed. Risk of serious damage to eyes.

Safety Statements S: 16 36/37/39 45

Keep away from sources of ignition - no smoking. 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).

US Classification and Label Text

Indication of Danger

Flammable (USA) Highly Flammable (EU). Toxic.

Aldrich Chemical - 128252

Page 5

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Risk Statements

Toxic by inhalation and if swallowed. Risk of serious damage to eyes.

Safety Statements

Keep away from sources of ignition - no smoking. 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).

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: Yes

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

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 guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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Page 6

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