SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
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SECTION 1: Identification

1.1 GHS Product identifier

Product name Ethanethiol

1.2 Other means of identification

Product number -
Other names Ethanthiol; etantiolol; Aethanethiol

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd
Address 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China
Telephone +86-4000-6969-66

1.5 Emergency phone number

Emergency phone number +86-4000-6969-66
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 2
Acute toxicity - Category 4, Inhalation
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H225 Highly flammable liquid and vapour
H332 Harmful if inhaled
H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)
Prevention P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

	P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment.
Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower]. P370+P378 In case of fire: Use ... to extinguish. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P317 Get medical help. P391 Collect spillage.
Storage	P403+P235 Store in a well-ventilated place. Keep cool.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ethanethiol	Ethanethiol	75-08-1	200-837-3	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Rinse skin with plenty of water or shower. Rinse skin with plenty of water or shower.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Rinse mouth. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Inhalation of vapor causes muscular weakness, convulsions, respiratory paralysis. High concentrations may cause pulmonary irritation. Liquid irritates eyes and skin. Ingestion causes nausea and irritation of mouth and stomach. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if

necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 m1/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool . Administer activated charcoal . Cover skin burns with dry sterile dressings after decontamination . Sulfur and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material /is/ on fire or involved in /a/ fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical, or carbon dioxide.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating fumes of sulfur dioxide are generated. Behavior in Fire: Vapor is heavier than air and may travel long distance to a source of ignition and flash back; containers may explode in a fire; offensive fumes are released when heated. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Personal protection: self-contained breathing apparatus. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible.

6.2 Environmental precautions

Evacuate danger area! Personal protection: self-contained breathing apparatus. Do NOT wash away into sewer. Collect leaking and spilled liquid in sealable containers as far as possible.

6.3 Methods and materials for containment and cleaning up

Odorous gases, such as methylmercaptans, mainly present a cosmetic problem. Thus a variety of methods and procedures, and also patents, are available with methods to absorb odors in scrubbers, by use of catalytic oxidizers or combined scrubber systems with oxidizing agents such as ozone or peroxides.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants and strong acids. Cool.Fireproof. Separated from strong oxidants, strong acids. Cool.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.5 ppm as TWA.MAK: 1.3 mg/m3, 0.5 ppm; peak limitation category: I(1); skin absorption (H); pregnancy risk group: D

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Ethyl mercaptan is a clear colorless low-boiling liquid (boiling point 97°F) with an overpowering, garlic-like/skunk-like odor. Flash point -55°F. Less dense than water and very slightly soluble in water. Vapors are heavier than air. Vapors may irritate nose and throat. May be toxic if swallowed, by inhalation or by contact. Added to natural gas as an odorant. Used as a stabilizer for adhesives.
Colour	Colorless liquid [Note: A gas above 95 degrees F].
Odour	Leek-like odor
Melting point/freezing point	-148°C
Boiling point or initial boiling point and boiling range	35°C(lit.)
Flammability	Class IA Flammable Liquid: Fl.P. below 73°F and BP below 100°F.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 2.8%; upper flammable limit: 18.0%
Flash point	-45°C
Auto-ignition temperature	570°F
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.003155 g/cm sec at 20 deg C
Solubility	0.7 % (NIOSH, 2016)
Partition coefficient n-octanol/water	log Kow = 1.27 (est)
Vapour pressure	8.51 psi (20 °C)
Density and/or relative density	0.839g/mLat 25°C(lit.)
Relative vapour density	2.1 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on heating. This produces toxic fumes including hydrogen sulfide (see ICSC 0165) and sulfur oxides. The substance is a weak acid. Reacts with oxidants. This generates fire and explosion hazard. Reacts with strong acids. This produces toxic gases of hydrogen sulfide and sulfur oxides.

10.2 Chemical stability

May deteriorate in normal storage and cause hazard.

10.3 Possibility of hazardous reactions

Dangerous, when exposed to heat or flame or oxidizers.The vapour is heavier than air and may travel along the ground; distant ignition possible.ETHYL MERCAPTAN reacts violently with calcium hypochlorite, May react vigorously with other oxidizing reagents. On contact with strong acids or when heated to decomposition it emits highly toxic fumes of sulfur oxides [Sax, 9th ed., 1996, p. 1575].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizers [Note: Reacts violently with calcium hypochlorite].

10.6 Hazardous decomposition products

When heated to decomposition it emits highly toxic fumes of /sulfur oxides/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 682 mg/kg
- Inhalation: LC50 Rat inhalation 2770 ppm/4 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system. This may result in lowering of consciousness and respiratory depression.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: EC50 Daphnia magna (Waterflea, <24 hr old) 90-280 mg/L/48 hr; static, 20 deg C, hardness: 250 mg/L CaCO3, dissolved oxygen: >6.5 mg/L, pH 8.2
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

An estimated BCF of 2.7 was calculated for ethyl mercaptan(SRC), using a water solubility of 1.56X10+4 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of ethyl mercaptan is estimated as 22(SRC), using a water solubility of 1.56X10+4 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that ethyl mercaptan is expected to have very high mobility in soil.

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2363 (For reference only, please check.)	IMDG: UN2363 (For reference only, please check.)	IATA: UN2363 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ETHYL MERCAPTAN (For reference only, please check.)	IMDG: ETHYL MERCAPTAN (For reference only, please check.)	IATA: ETHYL MERCAPTAN (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.) IMDG: 3 (For reference only, please check.) IATA: 3 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.) IMDG: I (For reference only, please check.) IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes IMDG: Yes IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Ethanethiol	Ethanethiol	75-08-1	200-837-3
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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