

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Pentane-1-thiol

1.2 Other means of identification

Product number

-

Other names

Amyl Mercaptan; pentane-1-thiol; n-Amyl mercaptan

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 Baishun Biotechnology Co., Ltd

Address

No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian District, Shanghai, 201400, China

Telephone

+86-21-37581181

1.5 Emergency phone number

Emergency phone number

+86-21-37581181

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

Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Inhalation

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed

H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

Response	<p>P270 Do not eat, drink or smoke when using this product.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P301+P317 IF SWALLOWED: Get medical help.</p> <p>P330 Rinse mouth.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P317 Get medical help.</p>
Storage	none
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
Pentane-1-thiol	Pentane-1-thiol	110-66-7	203-789-1	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. 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. 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 may cause nausea because of offensive odor. Contact with eyes or skin causes slight irritation. Ingestion may cause vomiting. (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 ml/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

Foam, carbon dioxide, dry chemical.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Sulfur dioxide gas is formed Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use powder, AFFF, 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

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Cover the spilled material with inert absorbent. Sweep spilled substance into covered sealable containers. Do NOT wash away into sewer.

6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Cover the spilled material with inert absorbent. Sweep spilled substance into covered sealable containers. Do NOT wash away into sewer.

6.3 Methods and materials for containment and cleaning up

Spills of thiols can be neutralized with a household bleach solution and flushed with an abundant flow of water. Thiols

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. Protect containers from physical damage. Store in cool and well-ventilated places, and separate from strong oxidizing materials. Outdoor or detached storage is preferred. For indoor storage, standard combustible liquid room is recommendable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Component	Pentane-1-thiol			
CAS No.	110-66-7			
	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m³	ppm	mg/m³
USA - NIOSH			0,5 (1)	2,1 (1)
	Remarks			
USA - NIOSH	(1) Ceiling limit value (15 min)			

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 spectacles.

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	Amyl mercaptan is a clear colorless to light-yellow liquid with an offensive odor. Flash point 65°F. Less dense than water and insoluble in water. Hence floats on water. Vapors are heavier than air. May be toxic by inhalation.
Colour	Liquid
Odour	STRONG, OFFENSIVE
Melting point/freezing point	198°C(lit.)
Boiling point or initial boiling point and boiling range	126°C
Flammability	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit	no data available
Flash point	18°C(lit.)
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble (NIOSH, 2016)
Partition coefficient n-octanol/water	log Kow = 2.74 (est)
Vapour pressure	27.4 mm Hg (37.7 °C)
Density and/or relative density	0.84
Relative vapour density	3.59 (Air= 1)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic and corrosive fumes including hydrogen sulfide and sulfur oxides. Reacts with acids, bases and strong oxidants.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Flammable, dangerous fire risk. /Mixture of isomers/The vapour mixes well with air, explosive mixtures are easily formed. AMYL MERCAPTAN is incompatible with oxidizing agents, reducing agents, alkali metals, calcium hypochlorite, concentrated nitric acid (NIOSH, 2016).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Can react vigorously with oxidizing materials.

10.6 Hazardous decomposition products

The substance decomposes on burning producing toxic and corrosive fumes including hydrogen sulfide and sulfur oxides.

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: no data available
- 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.

STOT-repeated exposure

no data available

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: n-Amyl mercaptan, present at 500 mg/L, resulted in 375 mg/L O₂ uptake in 168 hours using an activated sludge microbe, *Alcaligenes faecalis*, inoculum at 2,500 bacterial cells/L and the Warburg respirometer test at 20 deg C(1); overall the thiols were not as readily oxidized as were the corresponding alcohols(1). However, pure culture studies such as this are not appropriate for evaluating environmental biodegradation(2).

12.3 Bioaccumulative potential

An estimated BCF of 36 was calculated for n-amyl mercaptan(SRC), using a water solubility of 156 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 moderate, provided the compound is not metabolized by the organism(SRC).

12.4 Mobility in soil

The Koc of n-amyl mercaptan is estimated as 270(SRC), using a water solubility of 156 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that n-amyl mercaptan is expected to have moderate 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: UN1111 (For reference only, please check.)

IMDG: UN1111 (For reference only, please check.)

IATA: UN1111 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: AMYL MERCAPTAN (For reference only, please check.)

IMDG: AMYL MERCAPTAN (For reference only, please check.)

IATA: AMYL 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: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

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
Pentane-1-thiol	Pentane-1-thiol	110-66-7	203-789-1
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)			Not 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/>

Other Information

Health effects of exposure to the substance have not been investigated adequately.

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

Disclaimer: 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. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.