

# 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** 2-methylpropane-2-thiol

### 1.2 Other means of identification

**Product number** -  
**Other names** 2-Methyl-2-propanethiol; 2-Propanethiol, 2-methyl-

### 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  
Skin sensitization, Sub-category 1B  
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger  
**Hazard statement(s)** H225 Highly flammable liquid and vapour  
H317 May cause an allergic skin reaction  
H411 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.

<b>Response</b>	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. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release to the environment. 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. P302+P352 IF ON SKIN: Wash with plenty of water/...
<b>Storage</b> <b>Disposal</b>	P333+P317 If skin irritation or rash occurs: Get medical help. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P391 Collect spillage.
	P403+P235 Store in a well-ventilated place. Keep cool. 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
2-methylpropane-2-thiol	2-methylpropane-2-thiol	75-66-1	200-890-2	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 and then wash skin with water and soap.

#### 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.

### 4.2 Most important symptoms/effects, acute and delayed

no data available

### 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

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## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Alcohol foam, dry chemical, mist, fog.

### **5.2 Specific hazards arising from the chemical**

Highly flammable. Vapour/air mixtures are explosive.

### **5.3 Special protective actions for fire-fighters**

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

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate danger area! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### **6.2 Environmental precautions**

Evacuate danger area! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

### **6.3 Methods and materials for containment and cleaning up**

Evacuate danger area! Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT wash away into sewer. Carefully collect remainder, then remove to safe place.

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## **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. Do NOT use compressed air for filling, discharging, or handling. 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, strong bases, strong acids, metals and strong reducing agents. Fireproof. Separated from strong oxidants, strong bases, strong acids, metals, strong reducing agents.

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

no data available

**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

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**SECTION 9: Physical and chemical properties and safety characteristics**

<b>Physical state</b>	Liquid.
<b>Colour</b>	Colourless.
<b>Odour</b>	Heavy skunk odor
<b>Melting point/freezing point</b>	0 °C. Atm. press.:1 013 hPa. Remarks:At standard pressure and temperature.
<b>Boiling point or initial boiling point and boiling range</b>	64 °C. Atm. press.:1 013 hPa. Remarks:At standard temperature and pressure.
<b>Flammability</b>	Highly flammable.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	< -25 °C. Atm. press.:1 013.3 hPa.
<b>Auto-ignition temperature</b>	255 °C. Atm. press.:101.3 kPa. Remarks:Standard pressure assumed.
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	dynamic viscosity (in mPa s) = 138. Temperature:20°C. Remarks:Reference substance: Standard Oil.;dynamic viscosity (in mPa s) = 45. Temperature:40°C. Remarks:Reference substance: Standard Oil.;dynamic viscosity (in mPa s) = 1.11. Temperature:20°C. Remarks:Constant shear rate of 2000 1/s.
<b>Solubility</b>	Slightly sol in water; very sol in alcohol, ether, liquid hydrogen sulfide
<b>Partition coefficient n-octanol/water</b>	log Pow = 2.14. Temperature:20 °C. Remarks:Standard experimental conditions have been assumed.
<b>Vapour pressure</b>	19 kPa. Temperature:20 °C.
<b>Density and/or relative density</b>	0.8 g/cm <sup>3</sup> . Temperature:20 °C.
<b>Relative vapour density</b>	3.1 (vs air)
<b>Particle characteristics</b>	no data available

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**SECTION 10: Stability and reactivity****10.1 Reactivity**

Decomposes on burning. This produces toxic gases including sulfur oxides. Reacts with strong acids, strong bases, metals, strong oxidants and strong reducing agents. This produces sulfur oxides.

## **10.2 Chemical stability**

Remarkably stable to oxidizing agents.

## **10.3 Possibility of hazardous reactions**

Dangerous, when exposed to heat or flame. The vapour is heavier than air and may travel along the ground; distant ignition possible.

## **10.4 Conditions to avoid**

no data available

## **10.5 Incompatible materials**

Reacts with strong acids, strong bases, metals, strong oxidants, strong reducing agents to produce sulfur oxides.

## **10.6 Hazardous decomposition products**

The substance decomposes on burning producing toxic gases including sulfur oxides.

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# **SECTION 11: Toxicological information**

### **Acute toxicity**

- Oral: LD50 - rat (male) - 4 729 mg/kg bw.
- Inhalation: LC50 - rat (male/female) - 26 643 ppm.
- Dermal: LD50 - rabbit - > 2 000 mg/kg bw.

### **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 and respiratory tract. Exposure at high levels could cause lowering of consciousness.

### **STOT-repeated exposure**

no data available

### **Aspiration hazard**

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

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# **SECTION 12: Ecological information**

## 12.1 Toxicity

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 34 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 6.7 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 24 mg/L - 72 h.
- Toxicity to microorganisms: NOEC - activated sludge of a predominantly domestic sewage - 1 mg/L - 63 d.

## 12.2 Persistence and degradability

AEROBIC: While data specific to t-butyl mercaptan were not available(SRC, 2005), this compound would probably be difficult to biodegrade because of the branching in its structure(1).

## 12.3 Bioaccumulative potential

An estimated BCF of 9 was calculated for t-butyl mercaptan(SRC), using an estimated log Kow of 2.1(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

Using a structure estimation method based on molecular connectivity indices(1), the Koc of t-butyl mercaptan can be estimated to be 49(SRC). According to a classification scheme(2), this estimated Koc value suggests that t-butyl mercaptan is expected to have very high mobility in soil. Natural gas containing 0.5 lb of t-butyl mercaptan per million cubic feet was passed through a bed of pulverized, dry, raw montmorillonite clay and then measured for loss of odorant. Within 100 standard cubic feet, over 85% of the average influent concentration of t-butyl mercaptan was present in the effluent(3).

## 12.5 Other adverse effects

no data available

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# 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.

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# SECTION 14: Transport information

## 14.1 UN Number

ADR/RID: UN2347 (For reference only, please check.)

IMDG: UN2347 (For reference only, please check.)

IATA: UN2347 (For reference only, please check.)

## 14.2 UN Proper Shipping Name

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

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

IATA: BUTYL 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: 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

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## 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
2-methylpropane-2-thiol	2-methylpropane-2-thiol	75-66-1	200-890-2
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.

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## 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](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

The auto-ignition temperature is unknown in the literature. Explosive limits are unknown in literature, although the substance is combustible and has a flash point < 61°C. 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](mailto:sds@xixisys.com)**

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*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.*