



# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

**Product name:** 1-Butanethiol  
**Product code:** B0685  
**Company:** TCI (Shanghai) DEVELOPMENT CO., LTD.  
**Address:** No.96 Pu Gong Road, Shanghai Chemical Industry Park, Shanghai 201507 China  
**Responsible Department:** Sales Department  
**Telephone:** +86-(0)21-67121386  
**Fax:** +86-(0)21-67121385  
**e-mail:** sales@tcishanghai.com.cn  
**Revision number:** 1

## 2. HAZARDS IDENTIFICATION

### Classification of the GHS

#### PHYSICAL HAZARDS

Flammable liquids Category 2

#### HEALTH HAZARDS

Acute toxicity (Oral) Category 4

Acute toxicity (Inhalation) Category 4

Skin corrosion/irritation Category 3

Serious eye damage/eye irritation Category 2B

Reproductive toxicity Category 2

Specific target organ toxicity blood

- Single exposure [Category 2] Respiratory tract irritation, Narcotic effects

Specific target organ toxicity

- Single exposure [Category 3] Not classified

#### ENVIRONMENTAL HAZARDS

#### GHS label elements

#### Pictograms or hazard symbols



Signal word

Hazard statement

Danger

Highly flammable liquid and vapour

Harmful by inhalation and if swallowed

Causes mild skin irritation

Causes eye irritation

Suspected of damaging fertility or the unborn child

May cause damage to organs : blood

Precautionary statements

**2. HAZARDS IDENTIFICATION****[Prevention]**

Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Keep container tightly closed.  
 Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against ignition by the static discharge and the spark.  
 Do not breathe.  
 Use only outdoors or in a well-ventilated area.  
 Do not eat, drink or smoke when using this product.  
 Wash hands thoroughly after handling.

**[Response]**

Wear protective gloves/eye protection/face protection.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
 Rinse mouth.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If eye irritation persists: Get medical advice/attention.  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 If skin irritation occurs: Get medical advice/attention.  
 IF exposed or concerned: Get medical advice/attention.

**[Storage]**

Store in a well-ventilated place. Keep container tightly closed.  
 Store locked up.

**[Disposal]**

Dispose of contents/container through a waste management company authorized by the local government

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Substance/mixture:</b>	Substance
<b>Component(s):</b>	1-Butanethiol
<b>Percent:</b>	>97.0%(GC)
<b>CAS Number:</b>	109-79-5
<b>Synonyms:</b>	Butyl Mercaptan
<b>Chemical Formula:</b>	C <sub>4</sub> H <sub>10</sub> S

**4. FIRST AID MEASURES**

<b>Inhalation:</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.
<b>Skin contact:</b>	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Get medical advice/attention.
<b>Eye contact:</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Get medical advice/attention.
<b>Ingestion:</b>	Get medical advice/attention. Rinse mouth.
<b>Symptoms/effects:</b>	weakness, confuse , cough, dizziness, drowsiness, headache, nausea, vomiting, shortness of breath, redness, pain
<b>Protection of first-aiders:</b>	A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable extinguishing media:</b>	Dry chemical, foam, carbon dioxide.
<b>Extinguishing media not to be used:</b>	Water (It may scatter and spread fire.)
<b>Specific hazards:</b>	Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.

## 5. FIRE-FIGHTING MEASURES

### Specific methods:

Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Keep containers cool by spraying with water. Eliminate all ignition sources if safe to do so.

### Special protective equipment for firefighters:

When extinguishing fire, be sure to wear personal protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures:

Use extra personal protective equipment (self-contained breathing apparatus). Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.

### Environmental precautions:

Prevent product from entering drains.

### Methods and materials for containment and cleaning up:

Absorb spilled material in dry sand or inert absorbent before recovering it into an airtight container. In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

### Prevention of secondary hazards:

Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment.

## 7. HANDLING AND STORAGE

### Handling

#### Technical measures:

Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapor or mist. Keep away from heat/sparks/open flame/hot surfaces. -No smoking. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling.

Use a closed system if possible. Use a ventilation, local exhaust if vapor or aerosol will be generated.

#### Advice on safe handling:

Avoid all contact!

### Storage

#### Storage conditions:

Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store under inert gas.

Store locked up.

Store away from incompatible materials such as oxidizing agents.

#### Packaging material:

Law is followed.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering controls:

Install a closed system or local exhaust. Also install safety shower and eye bath.

### Exposure limits:

ACGIH TLV(TWA): 0.5 ppm

OSHA PEL(TWA): 0.5 ppm

### Personal protective equipment

#### Respiratory protection:

Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.

#### Hand protection:

Impervious gloves.

#### Eye protection:

Safety goggles. A face-shield, if the situation requires.

#### Skin and body protection:

Impervious protective clothing. Protective boots, if the situation requires.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical state (20°C):

Liquid

### Form:

clear

### Color:

Colorless

### Odor:

Stench

### Odour threshold:

0.00097 ppm

### pH:

No data available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Melting point/freezing point:</b>	No data available
<b>Boiling Point/Range:</b>	98 °C
<b>Flash Point:</b>	2°C
<b>Explosive limits</b>	
<b>Lower:</b>	1.4%
<b>Upper:</b>	11.3%
<b>Vapor Pressure:</b>	6.1kPa/25°C
<b>Vapor Density:</b>	3.1
<b>Density:</b>	0.84
<b>Solubility:</b>	Very slightly soluble in: Water (0.06g/100mL) Soluble in : Alcohol Ether
<b>log Pow =</b>	2.28
<b>Autoignition Temperature:</b>	522°C

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under proper conditions.
<b>Reactivity:</b>	No special reactivity has been reported.
<b>Conditions to avoid:</b>	Air-sensitive
<b>Incompatible materials:</b>	oxidizing agents, strong acids, bases, alkali metals
<b>Hazardous Decomposition Products:</b>	Carbon monoxide, Carbon dioxide, Sulphur oxides, Hydrogen sulfide

## 11. TOXICOLOGICAL INFORMATION

<b>Acute Toxicity:</b>	ihl-rat LC50:4020 ppm/4H ipr-rat LD50:399 mg/kg orl-mus LD50:3 g/kg orl-rat LD50:1500 mg/kg
<b>Skin corrosion/irritation:</b>	No data available
<b>Serious eye damage/irritation:</b>	eye-rbt 83 mg
<b>Germ cell mutagenicity:</b>	No data available
<b>Carcinogenicity:</b>	
<b>IARC =</b>	No data available
<b>NTP =</b>	No data available
<b>Reproductive toxicity:</b>	No data available
<b>RTECS Number:</b>	EK6300000

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	
<b>Fish:</b>	No data available
<b>Crustacea:</b>	No data available
<b>Algae:</b>	No data available
<b>Persistence / degradability:</b>	No data available
<b>Bioaccumulative potential(BCF):</b>	No data available
<b>Mobility in soil</b>	
<b>log Pow:</b>	2.28
<b>Soil adsorption (Koc):</b>	No data available
<b>Henry's Law constant(PaM<sup>3</sup>/mol):</b>	No data available

## 13. DISPOSAL CONSIDERATIONS

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system but exert extra care in igniting as this material is highly flammable. Observe all federal, state and local regulations when disposing of the substance

#### 14. TRANSPORT INFORMATION

**Hazards Class:** 3: Flammable liquid.  
**UN-No:** 2347  
**Proper shipping name:** Butyl mercaptan  
**Packing group:** II

#### 15. REGULATORY INFORMATION

**Safe management ordinance of dangerous chemical product (State Council announces on January 26, 2002):** Safe use and production, the storage of a dangerous chemical, transport, loading and unloading were prescribed.

**The list of a dangerous chemical(2002)/CN-No.:** 32116

#### 16. OTHER INFORMATION

**The reference company name of written contents**

**Company:** TCI (Shanghai) DEVELOPMENT CO., LTD.  
**Address:** No.96 Pu Gong Road, Shanghai Chemical Industry Park, Shanghai 201507 China  
**Department:** R&D (Information Management) Department  
**Telephone:** +86-(0)21-67121388\*461  
**Fax:** +86-(0)21-67121385

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