

# 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-methylbutan-1-ol

### 1.2 Other means of identification

**Product number** -  
**Other names** 2-Methyl-1-butanol,natural;DL-sec-Butylcarbinol  
(Synthetic);DL-2-Methyl-1-Butanol

### 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 3  
Skin irritation, Category 2  
Serious eye damage, Category 1  
Acute toxicity - Category 4, Inhalation  
Specific target organ toxicity – single exposure, Category 3

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Warning  
**Hazard statement(s)** H226 Flammable liquid and vapour  
H315 Causes skin irritation  
H318 Causes serious eye damage  
H332 Harmful if inhaled

	H335 May cause respiratory irritation
<b>Precautionary statement(s)</b>	
<b>Prevention</b>	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...</p> <p>P264 Wash ... thoroughly after handling.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p>
<b>Response</b>	<p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].</p> <p>P370+P378 In case of fire: Use ... to extinguish.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P332+P317 If skin irritation occurs: Get medical help.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P317 Get medical help.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P319 Get medical help if you feel unwell.</p>
<b>Storage</b>	<p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P405 Store locked up.</p>
<b>Disposal</b>	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-methylbutan-1-ol	2-methylbutan-1-ol	137-32-6	205-289-9	100%

---

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest.

#### 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. Do NOT induce vomiting. Rest. Refer for medical attention .

### **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**

no data available

---

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

### **5.1 Suitable extinguishing media**

Use alcohol-resistant foam, powder, carbon dioxide.

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

Flammable. Above 50°C explosive vapour/air mixtures may be formed.

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

Use alcohol-resistant foam, powder, 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**

Collect leaking and spilled liquid in sealable metal or glass containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

### **6.2 Environmental precautions**

Collect leaking and spilled liquid in sealable metal or glass containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

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

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

---

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

NO open flames, NO sparks and NO smoking. Above 50°C use a closed system, ventilation and explosion-proof electrical equipment. 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. Cool.

---

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

### **8.1 Control parameters**

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

MAK: 73 mg/m<sup>3</sup>, 20 ppm; peak limitation category: I(2); pregnancy risk group: C

**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.

**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**

<b>Physical state</b>	Liquid.
<b>Colour</b>	Colourless.
<b>Odour</b>	no data available
<b>Melting point/freezing point</b>	< -95 °C. Atm. press.:1 013 hPa. Remarks:Glass temperature.
<b>Boiling point or initial boiling point and boiling range</b>	128 °C. Atm. press.:1 013.25 hPa.
<b>Flammability</b>	Flammable.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	42.5 °C. Atm. press.:1 013 hPa.
<b>Auto-ignition temperature</b>	340 °C. Atm. press.:1 013 hPa.
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	dynamic viscosity (in mPa s) = 5.505. Temperature:19.3°C.;dynamic viscosity (in mPa s) = 3.868. Temperature:28.9°C.;dynamic viscosity (in mPa s) = 2.249. Temperature:45.7°C.
<b>Solubility</b>	MISCIBLE WITH ALC & ETHER
<b>Partition coefficient n-octanol/water</b>	log Pow = 1.29.
<b>Vapour pressure</b>	2.69 hPa. Temperature:20 °C. Remarks:Calculated from the regression equation.;4.27 hPa. Temperature:25 °C.
<b>Density and/or relative density</b>	0.82. Temperature:20 °C.
<b>Relative vapour density</b>	3.0 (Air=1)
<b>Particle characteristics</b>	no data available

---

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

no data available

## **10.2 Chemical stability**

no data available

## **10.3 Possibility of hazardous reactions**

no data available

## **10.4 Conditions to avoid**

no data available

## **10.5 Incompatible materials**

no data available

## **10.6 Hazardous decomposition products**

no data available

---

# **SECTION 11: Toxicological information**

### **Acute toxicity**

- Oral: LD50 - rat - 2 200 mg/kg bw.
- Inhalation: Inhalation hazard test - rat.
- Dermal: LD50 - rabbit - > 3 160 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, skin and respiratory tract. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system.

### **STOT-repeated exposure**

The substance defats the skin, which may cause dryness or cracking.

### **Aspiration hazard**

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

---

# **SECTION 12: Ecological information**

## **12.1 Toxicity**

- Toxicity to fish: LC50 - Danio rerio (previous name: Brachydanio rerio) - 530 mg/L - 96 h.

- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 341.21 mg/L - 48 h.
- Toxicity to algae: TTC (toxic threshold concentration) = TGK (Toxische Grenzkonzentration) which is comparable with EC5 - Scenedesmus quadricauda - 260 mg/L - 8 d.
- Toxicity to microorganisms: EC10 - activated sludge, domestic - 370 mg/L - 180 min. Remarks: Respiration rate.

## 12.2 Persistence and degradability

Data specific to the rate of environmental biodegradation of 2-methyl-1-butanol were not located. However, many biodegradation studies have demonstrated that the lower molecular weight aliphatic alcohols that are similar in structure to 2-methyl-1-butanol (such as 2-methyl-1-propanol) are readily biodegradable(1-11). This analogy indicates that 2-methyl-1-butanol is also likely to be readily biodegradable in the environment(SRC).

## 12.3 Bioaccumulative potential

Based upon a water solubility of 30,000 mg/l at 25 deg C(1), the BCF for 2-methyl-1-butanol can be estimated to be 1.8 from a regression-derived equation(2,SRC). Based upon a measured log Kow of 1.29(3), the BCF for 2-methyl-1-butanol can be estimated to be 5.6 from a regression-derived equation(2,SRC). These BCF values suggest that 2-methyl-1-butanol will not bioconcentrate significantly in aquatic organisms(SRC).

## 12.4 Mobility in soil

Based upon a water solubility of 30,000 mg/l at 25 deg C(1), the Koc for 2-methyl-1-butanol can be estimated to be 15 from a regression-derived equation(2,SRC). Based upon a measured log Kow of 1.29(3), the Koc for 2-methyl-1-butanol can be estimated to be 120 from a regression-derived equation(2,SRC). These BCF values suggest that 2-methyl-1-butanol has high to very high soil mobility(4).

## 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: UN1105 (For reference only, please check.)

IMDG: UN1105 (For reference only, please check.)

IATA: UN1105 (For reference only, please check.)

## 14.2 UN Proper Shipping Name

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

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

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

## 14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only)

IMDG: 3 (For reference only)

IATA: 3 (For reference only)

only, please check.)

only, please check.)

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
2-methylbutan-1-ol	2-methylbutan-1-ol	137-32-6	205-289-9
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

Creation Date July 15, 2019

Revision Date July 15, 2019

#### 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/>

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto: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.*