

## Chemical Safety Data Sheet MSDS / SDS

**2-Methyl-1-butanol**

Revision Date:2023-07-01 Revision Number:1

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : 2-Methyl-1-butanol  
CBnumber : CB5697005  
CAS : 137-32-6  
EINECS Number : 205-289-9  
Synonyms : 2-methyl-1-butanol,2-methylbutan-1-ol

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

**SECTION 2: Hazards identification****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

**Label elements****Pictogram(s)**

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Signal word : Danger

**Hazard statement(s)**

H226 Flammable liquid and vapour  
H315 Causes skin irritation  
H318 Causes serious eye damage  
H319 Causes serious eye irritation

H332 Harmful if inhaled

H335 May cause respiratory irritation

#### **Precautionary statement(s)**

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use ... for extinction.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container to.....

#### **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/...

P264 Wash ... thoroughly after handling.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

#### **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.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P317 Get medical help.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P319 Get medical help if you feel unwell.

#### **Storage**

P403+P235 Store in a well-ventilated place. Keep cool.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

## 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.

## Other hazards

no data available

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# SECTION 3: Composition/information on ingredients

## Substance

Product name	: 2-Methyl-1-butanol
Synonyms	: 2-methyl-1-butanol,2-methylbutan-1-ol
CAS	: 137-32-6
EC number	: 205-289-9
MF	: C5H12O
MW	: 88.15

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# SECTION 4: First aid measures

## Description of 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 .

## Most important symptoms and effects, both acute and delayed

no data available

## Indication of any immediate medical attention and special treatment needed

no data available

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# SECTION 5: Firefighting measures

## Extinguishing media

Use alcohol-resistant foam, powder, carbon dioxide.

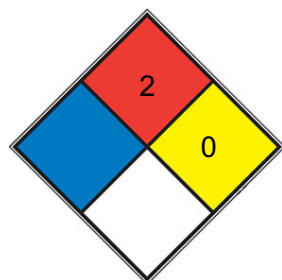
## Specific Hazards Arising from the Chemical

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

## Advice for firefighters

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

## NFPA 704



■ HEALTH

Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely

■ FIRE 2 divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

■ REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

□ SPEC.

□ HAZ.

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## SECTION 6: Accidental release measures

### 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.

### 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.

### 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.

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## SECTION 7: Handling and storage

### 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.

## Conditions for safe storage, including any incompatibilities

Fireproof. Cool.

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## SECTION 8: Exposure controls/personal protection

### 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

### Exposure controls

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

### Individual protection measures

#### Eye/face protection

Wear safety goggles.

#### 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

### Information on basic physicochemical properties

Physical state	Liquid
Colour	Clear colorless to very slightly yellow
Odour	no data available
Melting point/freezing point	< -95 °C. Atm. press.:1 013 hPa. Remarks:Glass temperature.
Boiling point or initial boiling point and boiling range	128 °C. Atm. press.:1 013.25 hPa.
Flammability	Flammable.
Lower and upper explosion limit/flammability limit	1.2-10.3%(V)
Flash point	42.5 °C. Atm. press.:1 013 hPa.
Auto-ignition temperature	340 °C. Atm. press.:1 013 hPa.
Decomposition temperature	no data available
pH	7 (H <sub>2</sub> O)

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Kinematic viscosity	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.
Solubility	water: slightly soluble3.6g/a00g at 30°C
Partition coefficient n-octanol/water	log Pow = 1.29.
Vapour pressure	3 mm Hg ( 20 °C)
Density and/or relative density	0.82. Temperature:20 °C.
Relative vapour density	3.0 (Air=1)
Particle characteristics	no data available

## SECTION 10: Stability and reactivity

### Reactivity

no data available

### Chemical stability

no data available

### Possibility of hazardous reactions

no data available

### Conditions to avoid

no data available

### Incompatible materials

no data available

### 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.

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## **SECTION 12: Ecological information**

### **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.

### **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).

### **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).

### **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,SRG). These BCF values suggest that 2-methyl-1-butanol has high to very high soil mobility(4).

#### **Other adverse effects**

no data available

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## SECTION 13: Disposal considerations

### **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

### **UN Number**

ADR/RID: UN1105 (For reference only, please check.)

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

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

### **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.)

### **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.)

### **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.)

### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No



## Special precautions for user

no data available

## Transport in bulk according to IMO instruments

no data available

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## SECTION 15: Regulatory information

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

#### 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.

#### PICCS

Listed.

#### Vietnam National Chemical Inventory

Listed.

#### IECSC

Listed.

#### Korea Existing Chemicals List (KECL)

Listed.

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## SECTION 16: Other information

### 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?pagelD=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pagelD=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/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.