

IN CASE OF TRANSPORTATION EMERGENCY CONTACT:

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## 1. IDENTIFICATION

Name

METHYL AMYL ALCOHOL

Synonyms

methyl amyl alcohol, methyl isobutyl carbinol, 4-methyl-2-amyl alcohol, 1,3- dimethylbutanol

CAS#

108-11-2

EC#

203-551-7

Product Uses

solvent for dyestuffs, oils, gums, resins, waxes, nitrocellulose & ethylcellulose; also organic synthesis – particularly lube oil additives, froth flotation of ores

## 2. HAZARDS IDENTIFICATION

OSHA HAZARDS:

FLAMMABLE LIQUID, IRRITANT

Health Hazards

Irritating to respiratory system. Vapors may cause drowsiness and dizziness. May cause moderate irritation to skin. Repeated exposure may cause skin dryness or cracking. Moderately irritating to eyes.

Signs and Symptoms

Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing. Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters. Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision. Other signs and symptoms of central nervous system (CNS) depression may include headache, nausea, and lack of coordination.

Aggravated Medical Condition

Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Respiratory system. Central nervous system (CNS). Skin. Eyes.

Safety Hazards

Flammable liquid and vapor. Vapors are heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

### 3. COMPOSITION

Material Formal Name 4-methylpentan-2-ol

Synonyms 1,3-dimethyl 1-butanol  
MIBC  
Methyl Amyl Alcohol

CAS No. 108-11-2

INDEX No. 603-008-00-8

EINECS No. 203-551-7  
Hazard Statements  
Precautionary Statements

### 4. FIRST AID MEASURES

SKIN: Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

EYES: Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.

INHALATION: Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.

INGESTION: Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

### 5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

#### Specific Hazards

Carbon monoxide may be evolved if incomplete combustion occurs. Will float and can be reignited on surface water. The vapor is heavier than air, spreads along the ground and distant ignition is possible.

#### Extinguishing Media

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.

#### Unsuitable Extinguishing Media

Do not use water in a jet.

#### Protective Equipment for Firefighters

Wear full protective clothing and self-contained breathing apparatus.

#### Additional Advise

Keep adjacent containers cool by spraying with water

### 6. ACCIDENTAL RELEASE MEASURES

Observe all relevant local and international regulations.

#### Protective measures

Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment (of product and fire fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

#### Clean Up Methods

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.  
For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

#### Additional Advice

See Chapter 13 for information on disposal. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapor may form an explosive mixture with air.

## 7. HANDLING AND STORAGE

#### General Precautions

Avoid breathing vapors or contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

#### Handling

Electrostatic charges may be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge ( $\leq 10$  m/sec). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations. Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Handling Temperature: Ambient.

#### Storage

Keep away from aerosols, flammables, oxidizing agents, corrosives and from products harmful or toxic to man or to the environment. Must be stored in a well-ventilated area, away from sunlight, ignition sources and other sources of heat. Storage Temperature: Ambient.

#### Product Transfer

Keep containers closed when not in use. Do not use compressed air for filling, discharging or handling.

#### Recommended Materials

For container paints, use epoxy paint, zinc silicate paint. For containers, or container linings use mild steel.

#### Unsuitable Materials

Aluminum if  $> 50$  °C. Most plastics.

#### Container Advice

Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

#### Additional Information

Ensure that all local regulations regarding handling and storage facilities are followed.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Material	Source	Type	ppm	mg/m <sup>3</sup>	Notation
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Methyl Isobutyl Carbinol	ACGIH	TWA	25 ppm
	ACGIH	STEL	40 ppm
	ACGIH	SKIN_DES	

can be absorbed  
through the skin

#### Additional Information

Skin notation means that significant exposure can also occur by absorption of liquid through the skin and of vapor through the eyes or mucous membranes. Wash hands before eating, drinking, smoking and using the toilet.

#### Exposure Controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

#### Personal Protective

##### Equipment Respiratory Protection

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapors [boiling point >65 °C (149 °F)] meeting EN141. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

#### Hand Protection

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection:

Longer term protection: Butyl rubber. Incidental contact/Splash protection: Neoprene rubber. Nitrile rubber. Viton. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.

Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

#### Eye Protection

Chemical splash goggles (chemical monogoggles).

Monogoggles (EN166)

#### Environmental Exposure Controls

Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapor.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Clear, Liquid
Odor :	Sweet
Boiling point :	130-133°C/266-271°F
Flash point :	41°C/106°F (IP170)
Explosion / Flammability : limits in air	1-5.5%(V)
Auto-ignition temperature :	305 °C / 581 °F (ASTM E-659)

Vapor pressure :	420 Pa at 20°C / 68°F
Specific gravity :	0.81 at 20° C /68°F
Density :	806 - 808 kg/m3 at 20 °C / 68 °F (ASTM D-4052)
Water solubility :	16g/l at 20° C / 68°F
Vapor density (air=1) :	3.5
Volatile organic carbon : content	70.6 % (EC/1999/13)
Evaporation rate (nBuAc=1) :	0.3 (ASTM D 3539, nBuAc=1)

## 10. STABILITY AND REACTIVITY

### Stability :

Stable under normal conditions of use. Reacts with strong oxidizing agents. Reacts with strong acids.

### Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources

### Materials to Avoid

Strong oxidizing agents. Strong acids

### Hazardous Decomposition Products

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

## 11. TOXICOLOGICAL INFORMATION

### Basis for Assessment:

Information given is based on product testing

### Acute Oral Toxicity :

Low toxicity: LD50>2000 mg/kg, Rat

### Acute Dermal Toxicity :

Low toxicity: LD50 >2000 mg/kg , Rabbit

### Acute Inhalation Toxicity :

Low toxicity: LC50 greater than near-saturated vapor concentration. / 4 hours, Rat. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

### Skin Irritation :

May cause moderate skin irritation (but insufficient to classify). Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

### Eye Irritation :

Moderately irritating to eyes (but insufficient to classify).

### Respiratory Irritation :

Inhalation of vapors or mists may cause irritation to the respiratory system.

### Sensitization :

Not expected to be a skin sensitizer.

### Repeated Dose Toxicity :

Kidney: caused kidney effects in male rats which are not considered relevant to humans

Mutagenicity :

No evidence of mutagenic activity.

Carcinogenicity :

Not expected to be carcinogenic.

Reproductive and :

Developmental Toxicity

Data not available.

## 12. ECOLOGICAL INFORMATION

Acute Toxicity

Fish :

Low toxicity: LC/EC/IC50 > 100 mg/l

Aquatic Invertebrates :

Expected to have low toxicity: LC/EC/IC50 > 100 mg/l

Microorganisms :

Expected to have low toxicity: LC/EC/IC50 > 100 mg/l

Mobility :

Floats on water. If product enters soil, it will be highly mobile and may contaminate groundwater.

Persistence/degradability :

by

Readily biodegradable meeting the 10 day window criterion. Oxidizes rapidly photo-chemical reactions in air.

Bioaccumulation :

Not expected to bioaccumulate significantly.

## 13. DISPOSAL CONSIDERATIONS

Material Disposal

Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.

Container Disposal

Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

Local Legislation

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

## 14. TRANSPORT INFORMATION

ADR

Class : 3

Packing group : III

Classification code : F1

Hazard identification no. : 30

UN No. : 2053

Danger label (primary risk) : 3

Proper shipping name :Methyl Isobutyl Carbinol

RID

Class : 3

Packing group : III

Classification code : F1

Hazard identification no. : 30

UN No. : 2053

Danger label (primary risk) : 3

Proper shipping name :Methyl isobutyl carbinol

#### IMDG

Identification number UN 2053

proper shipping name Methyl isobutyl carbinol

Class / Division 3

Packing group III

Marine pollutant: no

IATA (Country variations may apply)

UN No.: 2053

Proper shipping name : Methyl isobutyl carbinol

Class / Division : 3

Packing group: III

## 15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

EC Label Name: METHYL ISOBUTYL CARBINOL

EC label/EC Number 203-551-7

EC Classification : Irritant.

EC Annex I Number : 603-008-00-8

EC Symbols: : Xi Irritant.

EC Risk Phrases : R10 Flammable R37 Irritating to respiratory system

EC Safety Phrases : S24/25 Avoid contact with skin and eyes

AICS : Listed

DSL : Listed

INV (CN) : Listed

ENCS (JP) " Listed (2)-217

TSCA : Listed

EINECS : Listed 203-551-7

KECI (KR) : Listed KE-24720

PICCS (PH) : Listed

National Legislation

OE\_HPV : Listed

## 16. OTHER INFORMATION

R10 Flammable.

R37 Irritating to respiratory system.

#### Disclaimer

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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