

## Chemical Safety Data Sheet MSDS / SDS

## Isobutyl acetate SDS

Revision Date:2024-04-25 Revision Number:1

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

Product name: Isobutyl acetate

CAS: 110-19-0

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

Relevant identified uses: For R&amp;D use only. Not for medicinal, household or other use.

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

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**SECTION 2: Hazards identification****Classification of the substance or mixture**

Flammable liquids, Category 2

## GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

### Hazard statement(s)

H225 Highly flammable liquid and vapour

### 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.

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/...

#### 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.

#### Storage

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

#### 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 which do not result in classification

no data available

## SECTION 3: Composition/information on ingredients

**Substance**

Chemical name:	Isobutyl acetate
Common names and synonyms:	Isobutyl acetate
CAS number:	110-19-0
EC number:	203-745-1
Concentration:	100%

**SECTION 4: First aid measures****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. Do NOT induce vomiting. Refer for medical attention .

**Most important symptoms/effects, acute and delayed**

Vapors may irritate upper respiratory tract and cause nausea, vomiting, dizziness and loss of consciousness. Liquid irritates eyes and may irritate skin. (USCG, 1999)

**Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Esters and related compounds

## SECTION 5: Firefighting measures

### Suitable extinguishing media

To fight fire, use alcohol foam, CO<sub>2</sub>, dry chemical.

### Specific hazards arising from the chemical

Excerpt from ERG Guide 129 [Flammable Liquids (Water-Miscible / Noxious)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

### Special protective actions for fire-fighters

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

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Do NOT wash away into sewer. 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.

### Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Do NOT wash away into sewer. 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.

### Methods and materials for containment and cleaning up

1. Remove all ignition sources. 2. Ventilate area of spill or leak. 3. For small quant, absorb on paper towels. Evaporate in a safe place (such as a fume hood). Allow sufficient time for evaporating vapors to completely clear the hood ductwork. Burn the paper in a suitable location away from combustible materials. Large quantities can be collected and atomized in a suitable combustion

chamber. Isobutyl acetate should not be allowed to enter a confined space, such as a sewer, because of the possibility of an explosion.

## SECTION 7: Handling and storage

### 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.

### Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants, strong bases and strong acids.... MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMPOSE INTO TOXIC COMPONENTS ... SHOULD BE STORED IN A COOL WELL VENTILATED PLACE, OUT OF THE DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, AND SHOULD BE PERIODICALLY INSPECTED. INCOMPATIBLE MATERIALS SHOULD BE ISOLATED ...

## SECTION 8: Exposure controls/personal protection

### Control parameters

### Occupational Exposure limit values

TLV: 50 ppm as TWA; 150 ppm as STEL.MAK: 480 mg/m<sup>3</sup>, 100 ppm; peak limitation category: I(2); pregnancy risk group: C

### Biological limit values

no data available

### 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.

### Individual protection measures, such as personal protective equipment (PPE)

### Eye/face protection

Wear safety spectacles.

#### **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**

Physical state:	Isobutyl acetate is a clear colorless liquid with a fruity odor. Flash point 64°F. Less dense than water (6.2 lb / gal) and insoluble in water. Vapors are heavier than air .
Colour:	Colorless liquid
Odour:	Fruit-like odor
Melting point/freezing point:	95°C(lit.)
Boiling point or initial boiling point and boiling range:	117°C
Flammability:	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 1.3% by volume; Upper flammable limit: 10.5% by volume
Flash point:	21°C(lit.)
Auto-ignition temperature:	793° F (USCG, 1999)
Decomposition temperature:	no data available

pH:	Neutral
Kinematic viscosity:	0.676 mPa s at 25 deg C; 0.493 mPa s at 50 deg C; 0.370 mPa s at 75 deg C; 0.286 mPa s at 100 deg C
Solubility:	0.6 % at 77° F (NIOSH, 2016)
Partition coefficient n-octanol/water:	log Kow = 1.78
Vapour pressure:	15 mm Hg ( 20 °C)
Density and/or relative density:	0.873
Relative vapour density:	>4 (vs air)
Particle characteristics:	no data available

## SECTION 10: Stability and reactivity

### Reactivity

1300 ppm [IDLH based on a 10% of the lower explosive limit for safety considerations even though the relevant toxicology data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.]

Reacts with strong oxidants, strong acids and strong bases. This generates fire and explosion hazard.

### Chemical stability

Heat /contributes to instability/.

### Possibility of hazardous reactions

A very dangerous fire and moderate explosion hazard when exposed to heat, flame, or oxidizers. The vapour mixes well with air, explosive mixtures are easily formed. ISOBUTYL ACETATE reacts exothermically with acids to give alcohols and other acids. May react sufficiently exothermically with strong oxidizing acids to ignite the reaction products. Reactions with bases also generate heat. Combination with strong reducing agents (alkali metals and hydrides) generates flammable hydrogen.

### Conditions to avoid

no data available

#### **Incompatible materials**

Contact with nitrates, strong oxidizers, strong alkalis, and strong acids may cause fires and explosions.

#### **Hazardous decomposition products**

When heated to decomposition it emits acrid smoke and fumes.

### **SECTION 11: Toxicological information**

#### **Acute toxicity**

Oral: LD50 Rat oral >3200 mg/kg bw

Inhalation: LC50 Rat inhalation > 14.72 mg/L /6 hr

Dermal: no data available

#### **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 vapour is mildly irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system. Exposure far above the OEL could cause lowering of consciousness.

### **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**

### **Toxicity**

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water Flea) age < or =24 hr; Conditions: freshwater, static, 20-22 deg C; Concentration: 250000 ug/L for 24 hr /formulation

Toxicity to algae: LC50; Species: Chlorococcales (Green Algae Order); Conditions: freshwater, static; Concentration: 600000 ug/L for 24 hr /formulation

Toxicity to microorganisms: no data available

### **Persistence and degradability**

AEROBIC: Using a filtered sewage seed, isobutyl acetate 5- and 20-day theoretical BOD's of 60% and 81%, respectively, were measured in fresh water dilution tests(1); 5- and 20-day theoretical BOD's of 23% and 37%, respectively, were measured in salt water(1).

### **Bioaccumulative potential**

An estimated BCF of 7 was calculated in fish for isobutyl acetate(SRC), using a log Kow of 1.78(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).

### **Mobility in soil**

Using a structure estimation method based on molecular connectivity indices(1), the Koc of isobutyl acetate can be estimated to be 16(SRC). According to a classification scheme(2), this estimated Koc value suggests that isobutyl acetate is expected to have very high mobility in soil.

### **Other adverse effects**

no data available

## **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.

## **SECTION 14: Transport information**

### **UN Number**

ADR/RID: UN1213 (For reference only, please check.)

IMDG: UN1213 (For reference only, please check.)

IATA: UN1213 (For reference only, please check.)

### **UN Proper Shipping Name**

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

IMDG: ISOBUTYL ACETATE (For reference only, please check.)

IATA: ISOBUTYL ACETATE (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

**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.

**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?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/>

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