OTTO CHEMIE PVT LTD

201, 51-53 Maroo Bhavan, Kalbadevi, Mumbai – 400002, India. Tel : + 91 22 2207 0099 / 6638 2599
Email : info@ottokemi.com, Web : www.ottokemi.com

----------ISO 9001: 2015----------

MATERIAL SAFETY DATA SHEET

1.Identification
1.1GHS Product identifier
Isobutyl acetate, 98%
Code I 1548

2.Hazard identification
2.1Classification of the substance or mixture
Flammable liquids, Category 2
2.2GHS 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.
Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin 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 ...

2.3Other hazards which do not result in classification
none

3.Composition/information on ingredients
3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
isobutyl acetate	isobutyl acetate	110-19-0	none	100%

4.First-aid measures
4.1Description of necessary first-aid measures
General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled
Fresh air, rest. Refer for medical attention.
In case of skin contact
Remove contaminated clothes. Rinse and then wash skin with water and soap.
In case of eye contact
First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.
If swallowed
Rinse mouth. Do NOT induce vomiting. Refer for medical attention .
4.2Most 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)
4.3Indication 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/

5.Fire-fighting measures
5.1Extinguishing media
Suitable extinguishing media
To fight fire, use alcohol foam, CO2, dry chemical.
5.2Specific 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)
5.3Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures
6.1Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
6.2Environmental 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.
6.3Methods 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.

7.Handling and storage
7.1Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.
7.2Conditions 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 ...

8.Exposure controls/personal protection
8.1Control parameters
Occupational Exposure limit values
Recommended Exposure Limit: 10 Hour Time-Weighted Average: 150 ppm (700 mg/cu m).
Biological limit values
no data available
8.2Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
8.3Individual protection measures, such as personal protective equipment (PPE)
Eye/face protection
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
Respiratory protection
Wear dust mask when handling large quantities.
Thermal hazards
no data available

9.Physical and chemical properties

Physical state	Clear liquid
Colour	Colorless liquid
Odour	Fruit-like odor
Melting point/ freezing point	95\u00b0C(lit.)
Boiling point or initial boiling point and boiling range	117\u00b0C

Flammability	Class IB Flammable Liquid: Fl.P. below 22.78\u00b0C and BP at or above 37.78\u00b0C.Highly flammabl
Lower and upper explosion limit / flammability limit	Lower flammable limit: 1.3% by volume; Upper flammable limit: 10.5% by volume
Flash point	21\u00b0C(lit.)
Auto-ignition temperature	422.78\u00b0C (USCG, 1999)
Decomposition temperature	no data available
pH	Neutral
Kinematic viscosity	0.676 mPa s at 25\u00b0C; 0.493 mPa s at 50\u00b0C; 0.370 mPa s at 75\u00b0C; 0.286 mPa s at 100\u00b0C
Solubility	In water:7 g/L (20 \u00baC)
Partition coefficient n-octanol/water (log value)	log Kow = 1.78
Vapour pressure	15 mm Hg (20 \u00b0C)
Density and/or relative density	0.873
Relative vapour density	>4 (vs air)
Particle characteristics	no data available

10.Stability and reactivity
10.1Reactivity
no data available
10.2Chemical stability
Heat /contributes to instability/.
10.3Possibility 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.
10.4Conditions to avoid
no data available
10.5Incompatible materials
Contact with nitrates, strong oxidizers, strong alkalies, and strong acids may cause fires and explosions.
10.6Hazardous decomposition products
When heated to decomposition it emits acrid smoke and fumes.

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
no data available
STOT-repeated exposure
no data available
Aspiration hazard
no data available

12.Ecological information
12.1Toxicity
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\u00b0C; 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
12.2Persistence 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).
12.3Bioaccumulative 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).
12.4Mobility 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.
12.5Other adverse effects
no data available

13.Disposal considerations
13.1Disposal 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.

14.Transport information
14.1UN Number
ADR/RID: UN1213 IMDG: UN1213 IATA: UN1213
14.2UN Proper Shipping Name
ADR/RID: ISOBUTYL ACETATE
IMDG: ISOBUTYL ACETATE
IATA: ISOBUTYL ACETATE
14.3Transport hazard class(es)
ADR/RID: 3 IMDG: 3 IATA: 3
14.4Packing group, if applicable
ADR/RID: II IMDG: II IATA: II
14.5Environmental hazards
ADR/RID: no IMDG: no IATA: no
14.6Special precautions for user
no data available
14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
no data available

15.Regulatory information
15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
isobutyl acetate	isobutyl acetate	110-19-0	none
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.

Section 16: Other Information
This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.