



5515 North Service Rd. #306
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megaloid.ca



1. PRODUCT IDENTIFICATION

Name: *Isobutyl Acetate*

Synonyms: *2-methyl-1-propyl acetate; isobutyl acetate; acetic acid, isobutyl ester; acetic acid, 2-methylpropyl ester*

CAS# 110-19-0

Product Uses: *solvent in coatings, mfg. of perfumes, flavourings & pharmaceuticals*

Supplier Identifier: *Megaloid Laboratories Limited
5515 North Service Road, Suite 306
Burlington, Ontario, Canada
L7L 6G4
Phone: 905-337-7411 / Fax: 905-337-1686*

EMERGENCY INFORMATION Call CHEMTREC - (800) 424-9300 (CCN # 693764)

2. HAZARDS

GHS Class <i>(category)</i>	Flammable <i>(2)</i>	STOT <i>(3)</i>	<p>Label Pictograms</p>
Signal Word	DANGER		
Hazard Statements	<i>flammable liquid & vapour (H226)</i>	<i>May cause drowsiness or dizziness (H336)</i>	

GHS Precautionary Statements for Labelling

Prevention

- P210** Keep away from heat, sparks, open flames and hot surfaces. No smoking.
- P240** Ground or bond container and receiving equipment.
- P241** Use explosion-proof electrical, ventilating and lighting equipment.
- P242** Use only non-sparking tools.
- P243** Take precautionary measures against static discharge.
- P261** Avoid breathing vapours.
- P270** Do not eat, drink or smoke when using this product.
- P271** Use only outdoors or in a well-ventilated area.
- P280** Wear eye protection, protective gloves and clothing of butyl rubber

Response	
P303, P361, P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304, P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTRE or doctor if you feel unwell.
P370, P378	IN CASE OF FIRE: use alcohol-resistant foam to extinguish.
Storage	
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
<i>Isobutyl acetate</i>	<i>110-19-0</i>	<i>100</i>	<i>EC # 203-745-1</i>

4. FIRST AID

Inhalation

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

Skin Contact

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

Eye Contact

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

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.

First-aid Comments

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 & FLAMMABILITY

Extinguishing Media

Suitable Extinguishing Media

Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames.

Combustion Products

Carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments.

Static Charge Accumulation

cannot accumulate a static charge on agitation or pumping.

Special Protective Equipment and Precautions for Fire-fighters

Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

6. ACCIDENTAL RELEASE MEASURES

Serious Fire Potential:

blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof.

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel.

Environmental Precautions

It is good practice to prevent releases into the environment. Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Leak Precaution: dyke to control spillage and prevent environmental contamination

Handling Spill: Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal.

Other Information

Report spills to local health, safety and environmental authorities, as required.

7. HANDLING & STORAGE

Precautions for Safe Handling

Use non-sparking bronze or aluminium hand tools. All electrical and mechanical equipment (including lighting, switchgear and forklift trucks) used with or around this product must be explosion-proof. Ground or electrically bond the source container, receiving container and transfer pump before transferring contents. Avoid splashing by ensuring that the product nozzle is below the surface in the receiving container. Empty containers may contain a flammable or explosive vapour. Always ensure that containers, empty or full, are tightly sealed unless in use. Avoid breathing product vapour. Use with adequate ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a suitable respirator with an organic vapour cartridge.

Never cut, drill, weld or grind on or near this container. Avoid contact with skin & wash work clothes frequently. An eye bath must be available near the workplace.

Conditions for Safe Storage

Store & use in a cool, dry environment, away from sources of ignition & oxidizing agents.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWA 50ppm / 237mg/m³
ACGIH TLV 150ppm / 710mg/m³
OSHA PEL 150ppm / 710mg/m³

Ontario STEL 150ppm / 711.66mg/m³
ACGIH STEL not listed
OSHA STEL not listed

Ventilation	<i>Mechanical ventilation may be required to control airborne vapour or mist to regulated limits; a respirator with organic vapour cartridge should be available for escape, (store respirators in airtight containers [eg: "Tupperware"] to maintain cartridge "freshness")</i>
Hands	<i>Not required; "Barrier", or "Silver Shield" gloves may be worn – consult supplier to confirm suitability. Do NOT use vinyl (PVC), nitrile, "Viton" or neoprene!</i>
Eyes	<i>Safety glasses with side shields – always protect the eyes</i>
Clothing	<i>Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.</i>

Appropriate Engineering Controls

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. PHYSICAL PROPERTIES

Appearance	<i>Clear colourless liquid.</i>
Odour	<i>sweet, "fruity" odour</i>
Odour threshold	<i>1.1ppm</i>
pH	<i>none – (does not liberate hydrogen ions when dissolved)</i>
Melting Point/Freezing Point	<i>-99°C / -146°F</i>
Initial Boiling Point/Range	<i>117°C / 243°F</i>
Flash Point	<i>18°C / 64°F (closed cup)</i>
Evaporation Rate	<i>1.5 (Butyl Acetate =1)</i>
Flammability (Solid, Gas)	<i>Not Available</i>
Upper/Lower Flammability or Explosive Limit	<i>1.3% – 10.5% – flammable limits may be narrower than this</i>
Vapour Pressure	<i>13mmHg / 1.73kPa (20°C / 68°F)</i>
Vapour Density (air = 1)	<i>4</i>
Specific Gravity	<i>0.871 (20/20°C)</i>
Water Solubility	<i>7grams/litre (20°C) – sparingly water soluble Also soluble in most organic solvents</i>
Partition Coefficient, n-Octanol/Water (Log Kow)	<i>1.6</i>
Auto-ignition Temperature	<i>421°C / 790°F</i>
Conversion Factor	<i>1 ppm = 4.74 mg/m³</i>

Viscosity	<i>0.7centipoise (20°C / 68°F)</i>
Physical State	<i>Liquid</i>
Molecular Weight	<i>116 grams per mole</i>
Molecular Formula	<i>C6-H12-O2</i>

10. REACTIVITY

Dangerously Reactive *strong oxidising agents, potassium tert-butoxide may cause explosions. Also Reactive with strong acids react producing heat – may cause ignition; attacks certain elastomers.*

Chemical Stability

Stable; will not polymerize

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Heat, flames and sparks.

Mechanical Impact

Not sensitive

11. TOXICITY

Acute Toxicity	
LD₅₀ (oral)	<i>13,410mg/kg (rat), 4765mg/kg (rabbit)</i>
LD₅₀ (skin)	<i>>17,400mg/kg (rabbit) & >5000mg/kg (rabbit)</i>
LC₅₀ (inhalation)	<i>4940, >6330 & 8000ppm (rat)</i>

Skin Corrosion/Irritation

may be slightly irritating.

Serious Eye Damage/Irritation

may be slightly irritating; will not damage.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

slightly irritating; high vapour concentration may cause nausea, headache, dizziness, drowsiness.

Skin Absorption

slight; no toxic effects likely by this route.

Ingestion

may be slightly irritating to mouth and throat – not a route of industrial exposure.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Prolonged exposure may cause skin drying via removal of protective skin oils.

Respiratory and/or Skin Sensitization

not a sensitizer in humans or animals

Carcinogenicity

not considered a tumorigen or a carcinogen in humans or animals. IARC: Not specifically listed. ACGIH®: Not specifically designated. NTP: Not specifically listed. OSHA: Not specifically listed.

Reproductive Toxicity**Sexual Function and Fertility**

no known effect in humans or animals

Germ Cell Mutagenicity

no known effect in humans or animals

12. ECOLOGICAL INFORMATION

Bioaccumulation	<i>Not a bioaccumulator.</i>
Persistence and Degradability	Biodegradation - <i>biodegrades readily in the presence of oxygen; 60% & 81% in 5 & 20 days; 23% & 37% in 5 & 20 days in sea water</i>
	Abiotic Degradation - <i>reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 70 hours</i>
Mobility in soil, water	<i>somewhat water soluble; moves moderately rapidly in soil and water</i>
Aquatic Toxicity	
LC50 (Fish, 48hr)	<i>101-190mg/litre (Leuciscus idus), 17mg/litre (Oryzias latipes), 190mg/litre (Leuciscus idus, 48hr)</i>
EC50 (Crustacea, 24hr)	<i>1200mg/litre (Artemia salina), 168-342mg/litre (Daphnia magna) – three studies</i>
EC50 (Algae, 72hrs)	<i>370mg/litre (Pseudokirchnerella subcapitata),</i>
EC10 (Bacteria)	<i>487mg/litre (Pseudomonas putida), >1000mg/litre (“heterotropic bacteria”)</i>
EC5 (Bacteria)	<i>>200mg/litre (Pseudomonas putida)</i>

13. DISPOSAL**Water Disposal**

Do not flush to sewer, recycle solvent if possible, may be incinerated in approved facility; rapid biodegradation makes biological destruction in a suitable wastewater treatment facility a good option.

Containers

Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.


Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs).

Steel containers must be inspected, pressure tested & recertified every 5 years.

Never cut, drill, weld or grind on or near this container, even if empty

14. TRANSPORT CLASSIFICATION

Canada TDG	PIN	UN1213	
AND	Shipping Name	Isobutyl Acetate	
U.S.A. 49 CFR	Class & Packing Group	3, PG II	
Marine Pollutant ERAP Required Reportable Quantity E R G No.	Not a Marine Pollutant NO 5,000 lbs (2,270kg) 129		

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

15. REGULATIONS

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

Canadian Regulations

CEPA - National Pollutant Release Inventory (NPRI)

Not specifically listed.

U.S.A. Regulations

Immediately Dangerous to Life or Health: 1300 ppm

SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 150 ppm (700 mg/cu m).

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 150 ppm (700 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 150 ppm. Excursion Limit

Recommendation: Excursions in worker exposure levels may exceed 3 times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed 5 times the TLV-TWA, provided that the TLV-TWA is not exceeded.

Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission reduction for equipment leaks of VOC, considering costs, non air quality health and environmental impact and energy requirements. Isobutyl acetate is produced, as an intermediate or final product, by process units covered under this subpart.

Clean Water Act Requirements: Designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

CERCLA Reportable Quantities: Persons in charge of vessels or facilities are required to notify the National Response Centre (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 5000 lb or 2270 kg. The toll free number of the NRC is (800) 424-8802; In the Washington D.C. metropolitan area (202) 426-2675. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).

FDA Requirements: Isobutyl acetate is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) when intended for use in or on food it is of appropriate food grade and is prepared and handled as a food ingredient. Isobutyl acetate synthetic flavoring substances & adjuvants may be safely used in food in accordance with the following conditions ... They consist of one or more of the following /substances including isobutyl acetate/ used alone or in combination with flavoring substances generally recognized as safe in food, or regulated by an appropriate section in this part.

Global Inventory Status

Country/Region	Inventory	Status Description
Australia	AICS	Compliant
China	IECSC	Compliant
Japan	ENCS	Compliant
Korea	KECI	Compliant
Philippines	PICCS	Compliant

16. OTHER INFORMATION

NFPA RATING	Health 1	Flammability 3	Instability 0
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Prepared for Megaloid Laboratories Limited by Rob Cangiano
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Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
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