



5515 North Service Rd. #306  
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## 1. IDENTIFICATION

**Name:** *Isobutyl Alcohol*

**Synonyms:** *2- methyl-1-propanol; 2-methylpropyl alcohol; isobutanol, butanol, 1-hydroxymethylpropane*

**Product Uses:** *Solvent for paints, lacquers, resins, vegetable oils, etc*

**Supplier:** *Megaloid Laboratories Limited*

**Identifier:** *5515 North Service Road # 306  
Burlington, ON L7L 6G4*

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

## 2. HAZARD IDENTIFICATION

<b>GHS Class</b> <i>(category)</i>	<b>Flammable</b> <i>(3)</i>	<b>skin irritant</b> <i>(2)</i>	<b>eye irritant</b> <i>(2A)</i>	<b>STOT</b> <i>(3)</i>	<b>STOT</b> <i>(3)</i>
<b>Signal Word</b>	<b>DANGER</b>				
<b>Hazard Statements</b>	<i>Flammable liquid &amp; vapour (H226)</i>	<i>Causes skin irritation (H315)</i>	<i>Causes serious eye irritation (H319)</i>	<i>May cause respiratory tract irritation (H335)</i>	<i>May cause dizziness &amp; drowsiness (H336)</i>

### Hazardous Pictograms



### GHS Precautionary Statements for Labelling

**Prevention:**

**P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**P233** Keep container tightly closed.

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<b>P240</b>	Ground and bond container and receiving equipment.
<b>P241</b>	Use explosion-proof electrical/ ventilating/ lighting/ equipment
<b>P242</b>	Use non-sparking tools
<b>P243</b>	Take action to prevent static discharges.
<b>P261</b>	Avoid breathing dust/ fume/ gas/ mist/ vapours / spray.
<b>P264</b>	Wash skin thoroughly after handling.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P280</b>	Wear protective gloves/ eye protection/ face protection.
<b>Response:</b>	
<b>P304 + P340</b>	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
<b>P332 + P313</b>	If skin irritation occurs: Get medical advice/attention.
<b>P337 + P313</b>	If eye irritation persists: Get medical advice or attention.
<b>P362 + P364</b>	Take off contaminated clothing and wash it before reuse.
<b>P370 + P378</b>	In case of fire use alcohol-resistant foam to extinguish.
<b>Storage:</b>	
<b>P403 + P233</b>	Store in a well-ventilated place. Keep container tightly closed.
<b>P405</b>	Store locked up
<b>Disposal:</b>	
<b>P501</b>	Dispose of contents and container in accordance with local, regional, national and international regulations.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

<b>Chemical Name:</b>	<b>CAS No.</b>	<b>% weight</b>	<b>Other Identifiers</b>
<i>Isobutanol or Isobutyl Alcohol</i>	78-83-1	100	EC # 201-148-0

### 4. FIRST-AID MEASURES

#### 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. Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

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

Causes skin irritation. Causes serious eye irritation. May cause respiratory tract irritation. May cause dizziness and drowsiness.

### **Notes to physician**

Treat symptomatically

#### **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 MEASURES**

### **Suitable Extinguishing Media**

Alcohol-resistant foam, dry chemical, water fog or spray; product floats on water

### **Unsuitable Extinguishing Media**

Do not use direct water stream

### **Specific Hazards Arising from the Product**

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

### **Special Protective Equipment and Precautions for Fire-fighters**

Firefighters must wear SCBA Full Bunker Gear.

### **Static Charge Accumulation**

Cannot accumulate a static charge on agitation or pumping

**Summer Fire Potential: Above 25°C / 77°F, blanket spill with foam as a precaution against accidental ignition and take care to avoid sparks; do not operate (turn on OR off) electrical appliances near spill unless explosion proof**

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions, protective equipment and emergency procedures**

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Eliminate all ignition sources. Use grounded, explosion-proof equipment.

### **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.

*NOTE: If spill is extensive, and ventilation is inadequate, consider wearing an air-supplied respirator.*

### 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.

## 7. HANDLING & STORAGE

### Precautions for Safe Handling

Avoid generating or breathing product vapour. If vapour forms in use, install adequate ventilation to control airborne concentration below regulated limits (see Part 8). If dealing with a spill, and ventilation is impractical, wear a suitable respirator. *If the spill is extensive, use an air-supplied respirator.* Avoid contact with skin & wash work clothes frequently. An eye bath & safety shower should be available near the workplace.

Above 25°C / 77°F, take care to avoid sparks. The use of non-sparking bronze or aluminium hand tools and explosion-proof electrical & mechanical equipment (lighting, switchgear, forklift trucks, etc) is recommended. Ground containers, mixers & transfer equipment before handling to prevent static discharge. On transfer, keep the delivery nozzle below the surface in the receiving container to prevent splash. Empty containers may contain a flammable/explosive vapour. Never cut, drill, weld or grind on or near this container, whether empty or full. Always replace drum, pail or IBC cap prior to moving the container!

### Conditions for Safe Storage

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

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

**Ontario TWAEV** 50ppm / 152mg/m<sup>3</sup>  
**AGGIH TLV** 50ppm / 152mg/m<sup>3</sup>  
**OSHA PEL** 100ppm / 300mg/m<sup>3</sup>

**Ontario STEV** Not listed  
**ACGIH STEL** Not listed  
**OSHA STEL** Not listed

<b>Ventilation</b>	mechanical ventilation may be required to control airborne titre below regulated limits. If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protection equipment including approved respiratory protection. An approved respirator must be worn.
<b>Hands</b>	butyl, neoprene or "Viton" gloves recommended – <i>consult supplier to confirm suitability</i>
<b>Eyes</b>	safety glasses with side shields – <i>always protect the eyes</i>
<b>Clothing</b>	special protective clothing is not generally necessary.

## 9. PHYSICAL & CHEMICAL PROPERTIES

<b>Odour &amp; Appearance</b>	clear, colourless liquid with sweet, musty, alcoholic odour
<b>Odour threshold</b>	2-50 ppm (highly variable)
<b>pH</b>	none – <i>(does not liberate hydrogen ions when dissolved)</i>
<b>Melting point/Freezing point</b>	-108°C / -162°F
<b>Initial boiling point/boiling range</b>	108°C / 227°F
<b>Flash point</b>	28°C / 82°F (closed cup)
<b>Evaporation rate (Butyl Acetate = 1)</b>	0.8
<b>Flammability (solid; gas)</b>	no data available
<b>Lower flammable/explosive limit</b>	1.7%
<b>Upper flammable/explosive limit</b>	10.6%
<b>Vapour pressure</b>	13 mbar (22 °C)
<b>Vapour density (air = 1)</b>	2.6
<b>Relative density</b>	0.80 (25 °C)
<b>Water Solubility</b>	98 grams per litre (20°C / 68°F)
<b>Log Po/w (Octanol/H2O partition)</b>	0.65; also 0.83
<b>Auto ignition temperature</b>	415°C / 780°F & 427°C / 800°F
<b>Decomposition temperature</b>	not known – <i>no decomposition below autoignition temperature</i>
<b>Viscosity</b>	4.7centipoise (20°C / 68°F)
<b>Conversion Factor</b>	1ppm = 3.03mg/m <sup>3</sup>
<b>Molecular Weight</b>	74 grams per mole
<b>Molecular Formula</b>	C4-H10-O

## 10. STABILITY AND REACTIVITY

### Reactivity

Dangerously Reactive with

Strong oxidising agents; strong alkalies can provoke sudden hydrolysis & heat release; may explode if exposed to lithium aluminium hydride

Also Reactive with

Strong mineral acids; attacks some plastics

**Chemical Stability**

Stable; will not polymerize

**Possibility of Hazardous Reactions**

Polymerization will not occur.

**Conditions to avoid**

Exposure to elevated temperatures can cause product to decompose.

**Incompatible materials**

Avoid contact with oxidizing materials.

**Hazardous decomposition products**

None apart from Hazardous Combustion Products and above

**Sensitive to Mechanical Impact**

No

## 11. TOXICOLOGICAL INFORMATION

Acute Toxicity	
<b>Skin Contact</b>	a very mild skin irritant
<b>Skin Absorption</b>	slight; no toxic effects likely by this route
<b>Eye Contact</b>	liquid severely irritating
<b>Inhalation</b>	respiratory irritant causing coughing; headache, dizziness, drowsiness, intoxication
<b>Ingestion</b>	headache, dizziness, drowsiness, intoxication, weakness – <i>not a route of industrial exposure</i>
<b>LD<sub>50</sub> (oral)</b>	2460-3350 & 2860 mg/kg (rat), 3500mg/kg (mouse), 3000 & 3750mg/kg (rabbit)
<b>LD<sub>50</sub> (skin)</b>	2460, 3400 & 4240mg/kg (rabbit)
<b>LC<sub>50</sub> (inhalation)</b>	>6000, 6340 & 8000ppm (rat), 5100ppm (mouse), 2630 & 8670ppm (rabbit), 6600ppm (guinea pig)

## 11. TOXICITY, CONTINUED

### General

Prolonged skin exposure may cause dermatitis; liver & kidney damage may occur; central nervous

### Sensitising

Not a sensitiser in humans or animals

### Carcinogen

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

### Key to Abbreviations

ACGIH® = American Conference of Governmental Industrial Hygienists. IARC = International Agency for Research on Cancer. NTP = National Toxicology Program. OSHA = US Occupational Safety and Health Administration.

### Reproductive Effect

No known effect in humans, effect in animals only at doses producing maternal toxicity

### Mutagen

No known effect on humans or animals

### Synergistic With

Formaldehyde toxicity increases with ethyl acetate

## 12. ECOLOGICAL INFORMATION

<b>Bioaccumulation</b>	highly water soluble and not a bioaccumulator
<b>Biodegradation</b>	biodegrades rapidly in the presence of oxygen; >58% in 5days, >90% in 2 weeks <sup>1</sup> , 70-80% in 28 days <sup>1</sup>
<b>Abiotic Degradation</b>	reacts with atmospheric hydroxyl radicals; estimated ½-life in air 20 hours; also 56 hours
<b>Mobility in soil, water</b>	water soluble; moves readily in soil & water
<b>Aquatic Toxicity</b>	
<b>LC<sub>50</sub> (Fish, 96hr)</b>	2330mg/litre (Carassius auratus), 1800mg/litre (Gambusia affinis), 1460mg/litre (Ictalurus punctatus), 1600mg/litre (Lepomis macrochirus), 1430 & 1510mg/litre (Pimephelas promelas), 1330mg/litre (Salmo gairdneri)
<b>EC<sub>50</sub> (Crustacea, 48hr)</b>	1030, 1220 & 1440mg/litre (Daphnia magna), 1100mg/litre (Daphnia pulex), 600mg/litre (Artemia salina)
<b>EC<sub>50</sub> (Algae)</b>	593 & 1800mg/litre (Pseudokirchnerella subcapitata), 1250 & 2300mg/litre (Desmodesmus subspicatus) & 6400mg/litre ("plankton")
<b>EC<sub>50</sub> (Bacteria)</b>	1225mg/litre (Photobacterium phosphoreum), 1000mg/litre ("domestic sewage sludge")
<b>TGK (Bacteria)</b>	290m12g/litre (Microcystis aeruginosa), 280mg/litre (Pseudomonas fluorescens & Pseudomonas putida)

## 13. DISPOSAL

## Waste Disposal

**Do not flush to sewer**, recycle solvent if possible, local regulations may permit disposal in sanitary landfill, may be incinerated in approved facility after mixing with a suitable flammable waste

## 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 INFORMATION

<b>Canada TDG</b>	<b>UN / PIN #</b>	UN1212	
<b>AND</b>	<b>Shipping Name</b>	Butanol <u>OR</u> Isobutanol	
<b>U.S.A. 49 CFR</b>	<b>Class &amp; Packing Group</b>	3, III	

<b>Marine Pollutant</b>	Not a marine pollutant
<b>ERAP Required (CA only)</b>	No
<b>Emergency Response Guide No.</b>	129
<b>Reportable Quantity (RQ – USA only)</b>	5000 lbs (2270 kg)

***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. REGULATORY INFORMATION

<b>Canada DSL</b>	On Inventory
<b>U.S.A. TSCA</b>	On Inventory
<b>Europe EINECS</b>	On Inventory



### **Canada Regulations:**

CEPA - National Pollutant Release Inventory (NPRI)  
Part 1A.

### **U.S.A. Regulations:**

**Immediately Dangerous to Life or Health:** 1600ppm

**Allowable Tolerances:** Residues of isobutyl alcohol are exempted from the requirement of a tolerance when used in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Use: solvent.

**OSHA Standards:** Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 100ppm (300mg/m<sup>3</sup>). Vacated 1989 OSHA PEL TWA 50ppm (150mg/m<sup>3</sup>) is still enforced in some states.

**NIOSH Recommendations:** Recommended Exposure Limit: 10 Hour Time-Weighted Average: 50ppm (150mg/m<sup>3</sup>).

**Threshold Limit Values:** 8hr Time Weighted Avg (TWA): 50ppm. A TLV-TWA of 50ppm (152mg/m<sup>3</sup>) is recommended for occupational exposure to isobutanol to minimize the potential for skin and ocular irritation. 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. Isobutanol is produced, as an intermediate or a final product, by process units covered under this subpart.

**State Drinking Water Guidelines:** Florida 2,100 ug/L

**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 5000lb or 2270kg. The toll free number of the NRC is (800) 424-8802; The rule for determining when notification is required is in 40 CFR 302.4 (section IV. D.3.b).

**TSCA Requirements:** Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data

Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. 1-Propanol, 2-methyl is included on this list. Effective date: 3/7/86; Sunset date: 3/7/96.

**RCRA Requirements:** As stipulated in 40 CFR 261.33, when isobutyl alcohol, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to Federal and/or State hazardous waste regulations. Also defined as a hazardous waste is any residue, contaminated soil, water, or other debris resulting from the cleanup of a spill, into water or on dry land, of this waste. Generators of small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5).

**FIFRA Requirements:** Residues of isobutyl alcohol are exempted from the requirement of a tolerance when used in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only. Use: solvent.

**FDA Requirements:** Isobutyl alcohol is a food additive permitted for direct addition to food for human consumption as a synthetic flavoring substance and adjuvant in accordance with the following conditions: a) they are used in the minimum quantity required to produce their intended effect, and otherwise in accordance with all the principles of good manufacturing practice, and 2) they consist of one or more of the following, used alone or in combination with flavoring substances and adjuvants generally recognized as safe in food, prior-sanctioned for such use, or regulated by an appropriate section in this part. Isobutyl alcohol is an indirect food additive

for use only as a component of adhesives. Isobutyl alcohol may be used in inks for marking food supplements in tablet form, gum, and confectionery. Restrictions: no residue.

**SARA 311:** Acute health: No; Chronic health: No; Fire: Yes; Sudden release of pressure: No; Reactive: No

**SARA 313:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations**

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with

The applicable state(s):

Pennsylvania - Listed

New Jersey – Listed

Massachusetts - Listed

**International Regulations**

**International Inventories**

Listed on the chemical inventories of the following countries or qualifies for an exemption:

Australia (AICS)

China (IECSC)

Japan (ENCS)

Japan (ISHL)

Korea (KECI)

Philippines (PICCS)

**16. OTHER INFORMATION**

<b>NFPA RATING</b>	<b>Health</b> 2	<b>Flammability</b> 3	<b>Instability</b> 0
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**Prepared for** Megaloid Laboratories **by** Rob Cangiano  
**Preparation Date:** November 2004  
**Revision Dates:** December 2007, September 2010, September 2013, October 2015, November 2019

(1) *European Chemicals Agency (EChA)*

<b>Key to Abbreviations</b>	<p><b>ACGIH®</b> = American Conference of Governmental Industrial Hygienists  <b>AIHA®</b> = AIHA® Guideline Foundation <b>HSDB®</b> = Hazardous Substances Data Bank  <b>IARC</b> = International Agency for Research on Cancer  <b>NIOSH</b> = National Institute for Occupational Safety and Health  <b>NTP</b> = National Toxicology Program  <b>OSHA</b> = US Occupational Safety and Health Administration  <b>RTECS®</b> = Registry of Toxic Effects of Chemical Substances</p>
<b>References</b>	<p>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).</p>
<b>Disclaimer</b>	<p>Megaloid Laboratories Limited provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling</p>

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