



5515 North Service Rd. #306
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megaloid.ca



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Our commitment to sustainability.



1. PRODUCT IDENTIFICATION

Name: *Isopropyl Alcohol*

Synonyms: *2-propanol, 2-hydroxypropane, sec-propyl alcohol, IPA, propan-2-ol*


CAS# 67-63-0

Product Uses: *Solvent, disinfectant, organic synthesis, pharmaceuticals.*

Supplier *Megaloid Laboratories Limited*
Identifier: *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 (category)	Flammable (2)	Eye irritant (2A)	STOT (3)	
Signal Words	DANGER			
Hazard Statements	<i>highly flammable liquid & vapour (H225)</i>	<i>Causes serious eye irritation (H319)</i>	<i>May cause dizziness or drowsiness (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.
- P264** Wash hands thoroughly after handling.
- P280** Wear eye protection, protective gloves and clothing of butyl rubber

Response	
P370, P378	IN CASE OF FIRE: use alcohol-resistant foam to extinguish.
P304, P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P303, P361, P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305, P351, P338	IF IN EYES: rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Storage	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
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>2-Propanol</i>	<i>67-63-0</i>	<i>>99</i>	<i>EC # 200-661-7</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.

Most important symptoms and effects, both acute and delayed

Causes serious eye irritation
May cause dizziness or 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 & FLAMMABILITY

Extinguishing Media

Suitable Extinguishing Media

Alcohol-resistant 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
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. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

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

Take care to avoid sparks – use non-sparking bronze or aluminum hand tools. All electrical & mechanical equipment (lighting, switchgear, forklift trucks, etc.) used with or around this product must be explosion-proof. Always ground or electrically bond the source container, receiving container & pump before transferring contents. Avoid splashing by ensuring that the product nozzle is below the surface in the receiving container. Avoid creating or breathing product vapour. If vapour is created in use, install adequate exhaust ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a suitable respirator with organic vapour cartridge. Avoid prolonged contact with skin & wash work clothes frequently. An eye bath must be available near the workplace. Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, are tightly sealed unless in use.

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 TWAEV 200ppm / 490mg/m³
 ACGIH TLV 200ppm / 491mg/m³
 OSHA PEL 400ppm / 980mg/m³

Ontario STEV 400ppm / 980mg/m³
 ACGIH STEL 400ppm / 983mg/m³
 OSHA STEL 500ppm / 1225mg/m³

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>Nitrile or "Viton" gloves recommended – other types may also protect; consult supplier to confirm suitability. No special protective clothing required.</i>
Eyes	<i>Safety glasses with side shields – always protect the eyes</i>
Clothing	<i>No special protective clothing required</i>

Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground. Provide eyewash and safety shower if contact or splash hazard exists.

9. PHYSICAL PROPERTIES

Appearance	<i>Clear colourless liquid.</i>
Odour	<i>strong rubbing alcohol odour</i>
Odour threshold	<i>~ 40 ppm (98 mg/m³)</i>
pH	<i>none – does not yield hydrogen ions in solution</i>
Melting Point/Freezing Point	<i>-88.5 °C (-127.3 °F) (melting)</i>
Initial Boiling Point/Range	<i>82 °C (180 °F)</i>
Flash Point	<i>12 °C (54 °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>12% (upper); 2% (lower)</i>
Vapour Pressure	<i>33mmHg / 4.4kPa (20°C/ 68°F)</i>
Vapour Density (air = 1)	<i>2.1</i>
Relative Density (water = 1)	<i>0.786 at 20 °C (68 °F)</i>
Solubility	<i>Very soluble in water; highly soluble in common organic solvents..</i>
Partition Coefficient, n-Octanol/Water (Log Kow)	<i>0.05</i>

Auto-ignition Temperature	399 °C (750 °F)
Conversion Factor	1 ppm = 4.9 mg/m ³
Viscosity	2.4 centipoise (20°C / 68°F)
Physical State	Liquid
Molecular Weight	60 grams per mole
Molecular Formula	C3H8O

10. REACTIVITY

Dangerously Reactive with strong oxidising agents; strong acids; acid anhydrides; alkali metals or alkaline earth metals.

Also Reactive with ethylene oxide, phosgene, crotonaldehyde, or isocyanates

Chemical Stability

Stable; will not polymerize

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

Decomposes in presence of oxygen (air) & light slowly convert isopropanol into potentially explosive peroxides

Mechanical Impact

Not sensitive

11. TOXICITY

Acute Toxicity	
LD₅₀ (oral)	4400-5500mg/kg (rat), 5840mg/kg (rat), 4475mg/kg (mouse), 4710mg/kg (cat), 5030 & 7990mg/kg (rabbit), 4830mg/kg (dog)
LD₅₀ (skin)	12,900mg/kg (rabbit), 16,400mg/kg (rabbit)
LC₅₀ (inhalation)	10,800ppm (mouse), 5920, 10,420, 14,800, 16,000 & 17,000ppm (rat), >10,000ppm (rat)

Skin Corrosion/Irritation

Slightly irritating or not irritating.

Serious Eye Damage/Irritation

Liquid severely irritating; vapour irritating above 400ppm; 800ppm considered highly unpleasant.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

400ppm mildly irritating; 800ppm very unpleasant; headache, dizziness, drowsiness, intoxication and lack of co-ordination

Skin Absorption

Some skin absorption; no toxic effects likely by this route.

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Ingestion

Headache, dizziness, drowsiness, intoxication and lack of co-ordination.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Do not breathe vapours. If inhaled remove person to fresh air and keep comfortable for breathing.

Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer.

Carcinogenicity

Not a carcinogen. IARC: Group 3 – Not classifiable as to its carcinogenicity to humans. ACGIH®: A4 – Not classifiable as a human carcinogen. NTP: Not specifically listed. OSHA: Not specifically listed.

Reproductive Toxicity

Development of Offspring

Mutagen - no known effect on humans or animals.

Sexual Function and Fertility

No known effect on humans; fetotoxic in animals at high doses also causing maternal toxicity – not relevant to industrial exposure.

Germ Cell Mutagenicity

Not known to be a mutagen.

12. ECOLOGICAL INFORMATION

Bioaccumulation	<i>Not a bioaccumulator.</i>
Persistence and Degradability	Biodegradation - <i>biodegrades readily & rapidly: aerobic – >75% in 28days; anaerobic – >65% in 20days</i> Abiotic Degradation - <i>reacts with atmospheric hydroxyl (OH) radicals; estimated ½-life in air 3.2 days</i>
Mobility in soil, water	<i>Sufficiently water soluble to move readily in soil & water.</i>
Aquatic Toxicity	
LC50 (Fish, 96hr)	9640, 10,400 & 11,130mg/litre (<i>Pimephelas promelas</i>), 4200mg/litre (<i>Rasbora heteromorpha</i>) 8970mg/litre (<i>Leuciscus idus</i> – 48hr)
EC50 (Crustacea, 48hr)	1100 & 1400mg/l (<i>Crangon crangon</i>), 13,300mg/litre (<i>Daphnia magna</i>)
EC50 (Algae, 96hrs)	1000mg/l (<i>Scenedesmus subspicatus</i>), 1800mg/litre (<i>Scenedesmus quadricauda</i> – 168hr) & others . . .
EC50 (Bacteria)	1050 & 5175mg/l (<i>Pseudomonas putida</i>), 41,676mg/litre (“domestic sewage sludge”), 39,540 & 112,000mg/litre (“industrial sewage sludge”), 35,000 & 42,000mg/litre (<i>Photobacterium phosphoreum</i>) & others Toxicity Threshold - 1050mg/litre (<i>Pseudomonas putida</i>) ¹ , 3425mg/litre (<i>Urenoma parduzci</i>) ¹ , 4930mg/litre (<i>Entosyphon sulcatum</i>)

13. DISPOSAL

Water Disposal

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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 CLASSIFICATION

Canada TDG	PIN	UN1219	
AND	Shipping Name	Isopropyl Alcohol	
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 None 129		

15. REGULATIONS

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

Canadian Regulations

CEPA - National Pollutant Release Inventory (NPRI)

Part 1A, Part 5.

U.S.A. Regulations

Immediately Dangerous to Life or Health: 2000 ppm (Based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.)

Allowable Tolerances: Unless specifically excluded, residues resulting from the use of the following substances as either an inert or an active ingredient in a pesticide chemical formulation, including antimicrobial pesticide chemicals, are exempted from the requirement of a tolerance under FFDCA section 408, if such use is in accordance with good agricultural or manufacturing practices. 2-Propanol is included on this list.

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 400 ppm (980 mg/cu m). Vacated 1989 OSHA PEL TWA 400 ppm (980 mg/cu m); STEL 500 ppm (1225 mg/cu m) is still enforced in some states.

NIOSH Recommendations: Recommended Exposure Limit: 10 Hour Time-Weighted Average: 400 ppm (980 mg/cu m). Recommended Exposure Limit: 15 Minute Short-Term Exposure Limit: 500 ppm (1225 mg/cu m).

Threshold Limit Values: 8 hr. Time Weighted Avg (TWA): 200 ppm; 15 min Short Term Exposure Limit (STEL): 400 ppm A4; Not classifiable as a human carcinogen. Biological Exposure Index (BEI): Determinant: acetone in urine; Sampling Time: end of shift at end of workweek; BEI: 40 mg/L. The determinant may be present in biological specimens collected from subjects who have not been occupationally exposed, at a concentration which could affect interpretation of the result. Such background concentrations are incorporated in the BEI value. The determinant is nonspecific, since it is also observed after exposure to other chemicals.

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. Isopropanol is produced, as an intermediate or a final product, by process units covered under this subpart.

State Drinking Water Guidelines: Connecticut 2300 ug/l

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. 2-Propanol is included on this list. Effective date: 12/15/86; Sunset date: 12/15/96.

FIFRA Requirements: Unless specifically excluded, residues resulting from the use of the following substances as either an inert or an active ingredient in a pesticide chemical formulation, including antimicrobial pesticide chemicals, are exempted from the requirement of a tolerance under FFDCA section 408, if such use is in accordance with good agricultural or manufacturing practices. 2-Propanol is included on this list. Based on the reviews of the generic data for the active ingredients ethanol and isopropanol, the Agency has sufficient information on the health effects and on their potential for causing adverse effects in fish and wildlife and the environment. The Agency has determined that ethanol and isopropanol products, labeled and used as specified in this Reregistration Eligibility Decision, will not pose unreasonable risks or adverse effects to humans or the environment. Therefore, the Agency concludes that products containing ethanol and isopropanol for all uses are eligible for reregistration. As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their continued use. Under this pesticide reregistration program, EPA examines newer health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determines whether the use of the pesticide does not pose unreasonable risk in accordance to newer safety standards, such as those described in the Food Quality Protection Act of 1996. Pesticides for which EPA had not issued Registration Standards prior to the effective date of FIFRA '88 were divided into three lists based upon their potential for human exposure and other factors, with List B containing pesticides of greater concern than those on List C, and with List C containing pesticides of greater concern than those on List D. Isopropanol is found on List D. Case No: 4003; Pesticide type: insecticide, fungicide, herbicide, antimicrobial; Case Status: RED Approved 3/95; OPP has made a decision that some/all uses of the pesticide are eligible for reregistration, as reflected in a Reregistration Eligibility Decision (RED) document .; Active ingredient (AI): isopropanol; AI Status: OPP has completed a Reregistration Eligibility Decision (RED) for the case/AI.

FDA Requirements: Isopropyl alcohol (without residue) may be used in inks for marking food supplements in tablet form, gum, and confectionery. Diluents in color additive mixtures for drug use exempt from certification. Ingested drugs (general use) - Substance: isopropyl alcohol; Restrictions: In color coatings for pharmaceutical forms, no residue. Isopropanol 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 b) 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. Isopropyl alcohol may be present in the following foods under the conditions specified: (a) In spice oleoresins as a residue from the extraction of spice, at a level not to exceed 50 parts per million. (b) In lemon oil as a residue in production of the oil, at a level not to exceed 6 parts per million. (c) In hops extract as a residue from the extraction of hops at a level not to exceed 2.0 percent by weight: Provided, that, (1) The hops extract is added to the wort before or during cooking in the manufacture of beer. (2) The label of the hops extract specifies the presence of the isopropyl alcohol and provides for the use of the hops extract only as prescribed by paragraph (c)(1) of this section. Isopropanol is an indirect food additive for use only as a component of adhesives.

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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 Revision Dates: July 2009, June 2012, Nov 2013, Nov 2016, Nov 2017, Jan 2019, April 2020

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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