



## Safety Data Sheet

### 1. PRODUCT IDENTIFICATION

Name	<b>Isopropyl Acetate</b>
Name	2-propyl acetate,
Synonyms	2-acetoxypropane; isopropyl acetate; acetic acid, isopropyl ester & others
CAS#	108-21-4
Europe EC#	203-561-1
Product Uses	solvent for synthetic resins, inks & coatings, ingredient in perfume

### 2. HAZARDS

**Quick Guide:** flammable liquid, heavy vapour may travel, distant ignition & flashback are possible; mild nervous depressant; pleasant fruity odour fails to warn of hazard

#### Canada – WHMIS

Key:

#### B 2

**B 2** – Flash Point <38°C, **B 3** – Flash Point >38°C & <93°C

**D 1** – Immediately Toxic, **D 2** – Chronic Toxicity

**C** – Oxidising Substance, **E** – Corrosive, **F** – Reactive Substance



B2 – Flammable Liquid

#### U.S.A. – HMIS

Key:

#### Health – 1, Fire – 2, Reactivity – 0

0=minimal, 1=slight, 2=moderate, 3=serious, 4=severe

### 3. COMPOSITION

	%	TWAEV / TLV mg/m <sup>3</sup>	LD <sub>50</sub> (mg/kg) ORAL	LD <sub>50</sub> (mg/kg) SKIN	LC <sub>50</sub> ppm INHALATION
2-Propyl Acetate	100%	100 / 418	6160	>17,400	17,100

### 4. FIRST AID

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is irritation.
INHALATION:	Remove from contaminated area promptly. <b>CAUTION: Rescuer must not endanger himself!</b> If breathing stops, administer artificial respiration and seek medical aid promptly.
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.

*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

Flash Point	2°C / 36°F (closed cup)
Autoignition Temperature	460°C / 860°F
Flammable Limits	1.8% – 8%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Firefighting Precautions	alcohol or polymer foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water – water jet spreads flames; firefighters must wear SCBA
Static Charge Accumulation	probably cannot accumulate a static charge on agitation or pumping

**Please ensure that this MSDS is given to, and explained to people using this product.**

## 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.**

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

## 7. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition, heat, oxidising agents and substances listed in Part 7. 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.

Although this product does not retain a static charge on agitation or transfer, its flash point is low and it is prudent to ground or electrically bond both the source container and the receiving container, and transfer pump before transferring contents. Avoid splashing by ensuring that the product nozzle is below the surface in the receiving container. Ensure that containers, empty or full, or part full, are tightly sealed unless in use. Never cut, drill, weld or grind on or near this container.

Avoid breathing product vapour. Use with adequate ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a respirator with organic vapour cartridge. Limit contact with skin and wash work clothes frequently. An eye bath and safety shower must be available near the workplace.

## 8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV	100ppm	Ontario STEV	200ppm
ACGIH TLV	100ppm / 418mg/m <sup>3</sup>		
OSHA PEL	250ppm / 950mg/m <sup>3</sup>		
Ventilation	mechanical ventilation may be required to control airborne titre		
Hands	probably not required; "Silver Shield" gloves may be worn – <i>consult supplier to confirm suitability</i> <b>Do NOT use vinyl (PVC), nitrile, "Viton" or neoprene!</b>		
Eyes	safety glasses with side shields – <i>always protect the eyes</i>		
Clothing	no special protective clothing required		

## 9. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless, mobile liquid with strong, pleasant fruity (pear) odour
Odour Threshold	0.05ppm – 0.7ppm
Vapour Pressure	48mmHg / 6.3kPa (20°C / 68°F)
Evaporation Rate ( <i>Butyl Acetate = 1</i> )	5
Vapour Density (air = 1)	3.5
Boiling Point	90°C / 194°F
Freezing Point	-73°C / -100°F
Specific Gravity	0.872 (20/20°C)
Water Solubility	18grams per litre (20°C / 68°F)
Also soluble in	most organic solvents
Viscosity	0.5centipoise (20°C / 68°F)
pH	none – ( <i>does not liberate hydrogen ions when dissolved</i> )* <b>NOTE: Moisture hydrolyses isopropyl acetate slowly to acetic acid, giving rise to an acid pH.</b>
Conversion Factor	1ppm = 4.17g/m <sup>3</sup>
Molecular Weight	102grams per mole

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## 10. REACTIVITY

Dangerously Reactive With	strong oxidising agents, strong alkalies may cause vigorous hydrolysis
Also Reactive With	strong acids, attacks some plastics
Stability	stable; will not polymerize
Decomposes in Presence of	hydrolyses in alkaline medium – <i>the more alkaline the more rapid the hydrolysis</i>
Decomposition Products	isopropyl alcohol & acetic acid
Sensitive to Mechanical Impact	no

## 11. TOXICITY

### Effects, Acute Exposure

Skin Contact	little to no effect
Skin Absorption	slight; no toxic effects possible by this route
Eye Contact	slightly irritating, will not damage eyes; vapour may be irritating above 200ppm
Inhalation	may be irritating above 200ppm in some people; headache, dizziness, drowsiness, intoxication, shortness of breath may occur at higher airborne titres
Ingestion	100+ml may have similar effects to inhalation – not a route of industrial exposure

### Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis due to drying/degreasing effect
Sensitising	not a sensitizer in humans or animals
Carcinogen/Tumorigen	not considered a tumorigen or a carcinogen in humans or animals
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD <sub>50</sub> (oral)	6160-7380, 10,900, 15,000mg/kg (rat), 6945 & 7060mg/kg (rabbit)
LD <sub>50</sub> (skin)	above 17,400mg/kg (rabbit)
LC <sub>50</sub> (inhalation)	17,100, 37,000ppm (rat) – <i>other, even higher number are also published in ESIS</i>

## 12. ECOLOGICAL INFORMATION

Bioaccumulation	rapidly eliminated from the body and cannot a bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen: 5 day degradation – 38-52%; 20day – 76%
Abiotic Degradation days	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 5 hours; direct photolysis – 5
Mobility in soil, water	sufficiently water soluble to move readily in soil & water
<b>Aquatic Toxicity</b>	
LC <sub>50</sub> (Fish)	265 & 360mg/litre (Leuciscus idus – <i>test duration not stated</i> )
EC <sub>50</sub> (Crustacea, 48hr)	110 mg/litre (Artemia salina), 1260 & 4150mg/litre (Daphnia magna, 24hr)
EC <sub>50</sub> (Algae, 8 day)	1400mg/litre (Microcistis aeruginosa), 165mg/litre (Scenedesmus quadricauda)
EC <sub>50</sub> (Bacteria)	1378mg/litre (Chilomonas paramecium), 460mg/litre (Entosiphon sulcatum), 190mg/litre (Pseudomonas putida)

## 13. DISPOSAL

Waste Disposal	<b>do not flush to sewer</b> , recycle solvent if possible, may be incinerated in approved facility
Containers	<b>Drums</b> should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use. <b>Pails</b> must be vented and thoroughly dried prior to crushing and recycling. <b>IBCs</b> (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. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

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## 14. TRANSPORT CLASSIFICATION

<b>Canada TDG</b>	<b>PIN</b>	<b>UN - 1220</b>
<b>AND</b>	<b>Shipping Name</b>	<b>Isopropyl Acetate</b>
<b>U.S.A. 49 CFR</b>	<b>Class &amp; Packing Group</b>	<b>3 (II)</b>
<b>Marine Pollutant</b>		not a marine pollutant
<b>ERAP Required</b>		<b>NO</b>



## EMERGENCY INFORMATION

<b>Canada</b>	<b>Call CANUTEC (collect)</b>	<b>(613) 996-6666</b>
<b>U.S.A.</b>	<b>Call CHEMTREC</b>	<b>(800) 424-9300</b>

## 15. REGULATIONS

<b>Canada DSL</b>	<b>on inventory</b>
<b>U.S.A. TSCA</b>	<b>on inventory</b>
<b>Europe EINECS</b>	<b>on inventory</b>

**Immediately Dangerous to Life or Health:** 1800 ppm

**OSHA Standards:** Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 250 ppm (950 mg/cu m). Vacated 1989 OSHA PEL TWA 250 ppm (950 mg/cu m); STEL 310 ppm (1185 mg/cu m) is still enforced in some states.

**NIOSH Recommendations:** After reviewing available published literature, NIOSH provided comments to OSHA on August 1, 1988, regarding the "Proposed Rule on Air Contaminants" (29 CFR 1910, Docket No. H-020). In these comments, NIOSH questioned whether the PELs proposed for isopropyl acetate (TWA 250 ppm; STEL 310 ppm) were adequate to protect workers from recognized health hazards.

**Threshold Limit Values:** 8 hr Time Weighted Avg (TWA): 100 ppm; 15 min Short Term Exposure Limit (STEL): 200 ppm.

**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. Isopropyl acetate is produced, as an intermediate or final product, by process units covered under this subpart.

**FDA Requirements:** Isopropyl acetate is an indirect food additive for use only as a component of adhesives. Isopropyl acetate 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.

## 16. OTHER INFORMATION

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Data from RTECS, HSDB (Haz. Substance Data Base), Cheminfo (CCOHS), IUCLID Datasheets (ESIS – European Chem. Substance Info. System), & others.

Preparation Date: **October 2006** Revision Date: **October 2009, October 2012**

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