



Safety Data Sheet

1. PRODUCT IDENTIFICATION

Name	Ethyl Acetate
Synonyms	ethyl acetate; ethyl acetic ester; ethyl ethanoate; acetic acid, ethyl ester
CAS#	141-78-6
Europe EC#	205-500-4
Product Uses	solvent in coatings, inks; extraction of fatty materials in food processing, etc

2. HAZARDS

Quick Guide: flammable, heavy vapour may travel, distant ignition & flashback are possible; may irritate skin & eyes

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

U.S.A. – HMIS

Key:

Health – 1, Fire – 3, Reactivity – 0

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

3. COMPOSITION

	%	TWAEV / TLV mg/m ³	LD ₅₀ (mg/kg) ORAL	LD ₅₀ (mg/kg) SKIN	LC ₅₀ ppm INHALATION
Ethyl Acetate	100%	400 / 1440	4100	>18,000	10,600

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. **CAUTION: Rescuer must not endanger himself!** 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	-4°C / 24°F (closed cup)
Autoignition Temperature	427°C / 800°F
Flammable Limits	2% – 11.5%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Firefighting Precautions	alcohol foam, dry chemical, water fog or spray to cool & dilute, product floats on water – water jet spreads flames; firefighters must wear SCBA
Static Charge Accumulation	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 and oxidising agents. Always 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 cannot retain a static charge on agitation or transfer from one container to another, its flash point is low. It is prudent to ground or electrically bond the source container, receiving container & transfer pump before moving 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 respirator with an organic vapour cartridge.

Never cut, drill, weld or grind on or near this container. Avoid 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	400ppm / 1440mg/m ³	Ontario STEV	not listed
ACGIH TLV	400ppm / 1440mg/m ³	STEL	not listed
OSHA PEL	400ppm / 1400mg/m ³		
Ventilation	mechanical ventilation may be required to control airborne titre to regulated limits; if product is handled in a sealed apparatus at elevated temperature, respirators with an organic vapour cartridge should be available for all personnel for “escape” purposes; <i>these respirators should be kept from air in a Tupperware or similar container to preserve cartridge “freshness”.</i>		
Hands	“Barrier”, “Silver Shield”, “Tychem” gloves recommended – <i>other types may also protect; consult supplier to confirm suitability</i>		
Eyes	safety glasses with side shields – <i>always protect the eyes</i>		
Clothing	no special protective clothing required, but impermeable (above) apron, boots, & long sleeves are recommended if splashing is likely		

9. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless liquid with sharp, fruity odour
Odour Threshold	18–32ppm
Vapour Pressure	73mmHg / 9.7kPa (20°C / 68°F)
Evaporation Rate (<i>Butyl Acetate = 1</i>)	6.2
Vapour Density (air = 1)	3
Boiling Range	77°C / 171°F
Freezing Point	-83°C / -118°F
Specific Gravity	0.902 (20/20°C)
Water Solubility	86 grams per litre (20°C / 68°F)
Also soluble in	highly soluble in most organic solvents
Viscosity	0.44 centipoise (25°C / 77°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>) <i>NOTE: Pure anhydrous product is neutral. Release of acetic acid from hydrolysis may lower pH.</i>
Conversion Factor	1ppm = 3.6mg/m ³
Molecular Weight	88grams per mole

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10. REACTIVITY

Dangerously Reactive With	strong oxidising agents; strong alkalies can provoke rapid hydrolysis & heating may explode on contact with lithium aluminium hydride
Also Reactive With	strong mineral acids; attacks some plastics
Stability	stable; will not polymerize
Decomposes in Presence of	alkalies
Decomposition Products	ethanol, acetic acid
Sensitive to Mechanical Impact	no

11. TOXICITY**Effects, Acute Exposure**

Skin Contact	little to no effect
Skin Absorption	slight; no toxic effects likely by this route
Eye Contact	may be slightly irritating; vapour irritating at 400ppm
Inhalation	irritating at 400ppm; may cause headache, dizziness, drowsiness, nausea
Ingestion	low toxicity; symptoms similar to inhalation may occur as ethyl acetate hydrolyses to ethanol; <i>ingestion toxicity could only be seen if ethyl acetate is deliberately ingested</i>

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis due to removal of protective oils from skin
Sensitising	not a sensitiser 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	formaldehyde toxicity increases with exposure to ethyl acetate
LD ₅₀ (oral)	5620 & 10,200mg/kg (rat), 4100mg/kg (mouse), 4935mg/kg (rabbit), 5500mg/kg (guinea pig),
LD ₅₀ (skin)	>18,000mg/kg (rabbit)
LC ₅₀ (inhalation)	19,600 & 55,000ppm (rat), 10,600 & 12,500ppm (mouse)

12. ECOLOGICAL INFORMATION

Bioaccumulation	metabolised & excreted very quickly; cannot bioaccumulate
Biodegradation	biodegrades readily & rapidly in the presence of oxygen; 36-68% in 5 days, also 90% in 20 days
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; estimated ½-life in air is 8-10 days
Mobility in soil, water	water soluble; moves readily in soil and water
Aquatic Toxicity	
LC ₅₀ (Fish, 96hr)	484mg/litre (Oncorhynchus mykiss), 230mg/litre (Pimephales promelas), 230 & 455mg/litre (Salmo gairdneri), 212mg/litre (Heteropneustes fossilis)
EC ₅₀ (Crustacea, 48hr)	164mg/litre (Daphnia cucullata), 717mg/litre (Daphnia magna), 262 & 295mg/litre (Daphnia pulex), 750mg/litre (Gammarus pulex), 1600mg/litre (Asellus aquaticus)
EC ₅₀ (Algae)	3300 & 5600mg/litre (Scenedesmus subspicatus)
NOEC (Algae)	>1000mg/litre (Chlorella aeruginosa & Scenedesmus pannonicus)
EC ₅₀ (Bacteria)	1180 & 5870mg/litre (Photobacterium phosphoreum), 1500 & 7400mg/litre (Pseudomonas fluorescens)

13. DISPOSAL

Waste Disposal	do not flush to sewer , recycle solvent if possible, may be incinerated in approved facility
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. <i>Never cut, drill, weld or grind on or near this container, even if empty</i>

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14. TRANSPORT CLASSIFICATION

Canada TDG	PIN	UN - 1173
AND	Shipping Name	Ethyl Acetate
U.S.A. 49 CFR	Class & Packing Group	3 (II)
Marine Pollutant		not a marine pollutant
ERAP Required		NO



EMERGENCY INFORMATION

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

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory

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: **December 2003** Revision Date: **October 2006, October 2009, October 2012**

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