

Material Safety Data for: Ethyl 3-Ethoxypropionate

1. PRODUCT IDENTIFICATION

Name 3-ethoxypropionic acid, ethyl ester
Synonyms ethyl-3-ethoxypropanoate; ethyl beta-ethoxypropionate; propionic acid, 3-ethoxy, ethyl ester
CAS# 763-69-9
Product Uses solvent in coatings, chemical synthesis

2. INGREDIENTS

	%	TWAEV / TLV mg/m ³	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
Ethyl 3-ethoxypropionate	100%	not listed	>3200	9500	not known

3. (a) HAZARDS SUMMARY

Hazards, Quick Guide: flammable liquid, heavy vapour may travel, distant ignition and flashback are possible; slightly irritating

Canada – WHMIS

Key:

B 3

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

U.S.A. – HMIS

Key:

Health – 1, Fire – 2, Reactivity – 0

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

3. (b) HAZARDS – TOXICITY

Effects, Acute Exposure

Skin Contact	may be slightly irritating
Skin Absorption	slight; no toxic effects likely by this route
Eye Contact	may be slightly irritating; will not damage eyes
Inhalation	may irritate but low vapour pressure makes this action unlikely
Ingestion	not known, low toxicity – not a route of industrial exposure

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis & skin cracking; prolonged exposure of rats to 1000ppm, and to oral 1000mg/kg/day caused slight metabolic effects – <i>both doses are high and not relevant to industrial exposure – particularly inhalation due to disagreeable odour</i>
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	not known
LD ₅₀ (oral)	3200-5000 & >5000mg/kg (rat)
LD ₅₀ (skin)	9500mg/kg (rabbit), >18,000mg/kg (guinea pig)
LC ₅₀ (inhalation)	>1220 & >2400ppm (rat),

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

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4. FIRST AID

- SKIN:** Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or 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. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless liquid with mild, sweetish, unpleasant odour
Odour Threshold	not known
Vapour Pressure	1.28mmHg / 0.17kPa (25°C / 77°F)
Evaporation Rate (<i>Butyl Acetate = 1</i>)	0.12
Vapour Density (air = 1)	5
Boiling Range	165-172°C / 329-342°F
Freezing Point	-50°C / -58°F
Specific Gravity	0.95 (20/20°C)
Water Solubility	~10 grams per litre (25°C / 77°F)
Also soluble in	most organic solvents
Viscosity	1.12centipoise (25°C / 77°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>)
Conversion Factor	1ppm = 5.97mg/m ³
Molecular Weight	146grams per mole

6. FLAMMABILITY & FIRE FIGHTING

Flash Point	58°C / 136°F (closed cup)
Autoignition Temperature	377°C / 711°F
Flammable Limits	~1% – 8.7%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Fire Fighting Precautions	foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water – water jet spreads flames; fire fighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

7. STABILITY / REACTIVITY

Dangerously Reactive With	strong oxidising agents; strong acids
Also Reactive With	none known
Stability	stable; will not polymerize
Decomposes in Presence of	not known
Decomposition Products	none apart from Hazardous Combustion Products
Sensitive to Mechanical Impact	no

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8. PROTECTIVE EQUIPMENT / EXPOSURE CONTROL

ACGIH TLV	not listed
OSHA PEL	not listed
STEL	not listed
Ventilation	mechanical ventilation may be required to clear the (<i>nauseatingly unpleasant</i>) odour of this product
Hands	polyvinyl alcohol gloves may be used – <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

9. HANDLING & STORAGE

Store in a cool, dry environment, away from sources of ignition, heat and oxidising agents. Empty containers may contain a flammable / explosive vapour. Always ensure that containers, whether empty or full, or part 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 (see Part 8).

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.

10. SPILL PROCEDURES

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

11. 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>

12. ENVIRONMENTAL INFORMATION

Bioaccumulation	this product is rapidly eliminated and cannot bioaccumulate
Biodegradation	this product degrades readily in the presence of oxygen; 43% biodegradation in 28d & 59% in 20d
Abiotic Degradation	this product reacts with atmospheric hydroxyl radicals; its estimated half-life in air is 0.7 days
Mobility in soil, water	this product is sufficiently water soluble to move readily & rapidly in soil and water
Aquatic Toxicity	
LC ₅₀ (Fish, 96hr)	62 & 88mg/litre (pimephales promelas)
EC ₅₀ (Crustacea, 48hr)	95 & 970mg/litre (daphnia magna), 95mg/litre (gammarus fasciatus)
EC ₅₀ (Bacteria)	>5000mg/litre (activated sludge, industrial waste treatment)

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13. TRANSPORT REGULATIONS

<i>Canada TDG</i>	PIN	UN-1993
AND	Shipping Name	FLAMMABLE LIQUIDS N.O.S. (ethyl 3-ethoxypropionate)
<i>U.S.A. 49 CFR</i>	Class	3
	Packing Group	III
Marine Pollutant		not a marine pollutant

14. EMERGENCY INFORMATION

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

15. REGULATIONS

Canada DSL	on inventory
U.S.A. TSCA	on inventory
Europe EINECS	on inventory (EC# 212-112-9)

16. PREPARATION INFORMATION

Prepared for Megaloid Laboratories by Peter Bursztyn, (705) 734-1577

File Name: **EEP**

With data from RTECS, Haz. Substance Data Base, Cheminfo (CCOHS), IUCILID Datasheets (European Chem. Substance Info. System), & others, as available

*Preparation Date: **December 2003** Revision Date: **December 2006, November 2009***

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