



Safety Data Sheet

1. PRODUCT IDENTIFICATION

Name	2-Ethylhexyl Acrylate
Synonyms	propenoic acid, 2-ethylhexyl ester; acrylic acid, 2-ethylhexyl ester & others
CAS#	103-11-7
Europe EC#	203-080-7
Product Uses	monomer for acrylic resins, adhesives

2. HAZARDS

Quick Guide: combustible liquid, highly irritating to skin, inhalation of vapour or mist irritating to lungs, may polymerise in the presence of peroxides or heat, adequate titre of inhibitor required to prevent polymerisation

Canada – WHMIS
Key:

B 3, D 2A, F* (*polymerises readily in absence of inhibitor)
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 – 3, Fire – 2, Reactivity – 1/3* (*polymerises readily in absence of inhibitor)
 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
acrylic acid, 2-ethylhexyl ester	100%	not listed	3550	7550	>240

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.

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

5. FIRE FIGHTING & FLAMMABILITY

Flash Point	87°C / 189°F (closed cup)
Autoignition Temperature	230°C / 446°F
Flammable Limits	0.7% – 8.2%
Combustion Products	carbon monoxide, nitrogen oxides, smoke, part oxidised hydrocarbon fragments
Fire Fighting Precautions	CO ₂ , foam, dry chemical, water fog or spray, product floats on water – water jet spreads flames; firefighters must wear SCBA
Static Charge Accumulation	cannot accumulate a static charge on agitation or pumping

6. ACCIDENTAL RELEASE MEASURES

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, direct sun, heat and oxidising agents. Storage above 30°C reduces shelf life.

On prolonged storage this product may react with oxygen in the air to form explosive or flammable peroxides. Ensure that drums are full and tightly sealed, but have adequate headspace. Bulk storage tanks should be vented to the atmosphere. Do not store product longer than 6 months. *NOTE: Phenolic inhibitor (eg: hydroquinone or monomethyl ether of hydroquinone) requires oxygen to work – do not flush storage container with nitrogen!* Check product regularly for adequate inhibitor titre.

Empty containers may contain a flammable or explosive vapour. Always ensure that containers, whether empty or full, or part full, are tightly sealed unless in use.

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	<i>not listed</i> in North America; <i>recommended TLV in Europe = 5ppm</i>
Ventilation	probably not required due to low vapour pressure
Hands	“Trellchem” or “Barricade” gloves recommended – <i>other types may also protect; consult supplier</i>
Eyes	safety glasses with side shields – <i>always protect the eyes</i>
Clothing	if precautions are taken against splashing, no special protective clothing required

9. PHYSICAL PROPERTIES

Odour & Appearance	clear, colourless liquid with odour
Odour Threshold	below 0.1ppm
Vapour Pressure	0.09mmHg / 0.012kPa (20°C / 68°F)
Evaporation Rate (<i>Butyl Acetate = 1</i>)	not known
Vapour Density (air = 1)	6.4
Boiling Range	216°C / 421°F
Freezing Point	-90°C / -130°F
Specific Gravity	0.885 (20/20°C)
Water Solubility	100mg/litre (25°C / 77°F)
Also soluble in	most organic solvents, limited solubility in glycols and methanol
Viscosity	1.76centipoise (70°C / 158°F)
pH	none – (<i>does not liberate hydrogen ions when dissolved</i>)
Conversion Factor	1ppm = 7.52mg/m ³
Molecular Weight	184grams per mole

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10. REACTIVITY

Dangerously Reactive With	strong oxidising agents and peroxides; may react with strong acids or alkalies
Also Reactive With	not applicable
Stability	stable when properly inhibited (eg: hydroquinone or hydroquinone monomethyl ether); polymerises readily on heating or exposure to peroxides or ultraviolet radiation (sunlight)
Decomposes in Presence of	peroxides and/or heat
Decomposition Products	potentially explosive peroxides may accumulate on prolonged contact with air
Sensitive to Mechanical Impact	no

11. TOXICITY**Effects, Acute Exposure**

Skin Contact	severely irritating in animal testing; redness and oedema at application site
Skin Absorption	slight; no toxic effects likely by this route
Eye Contact	mild to severe irritant based on animal testing – <i>various results conflict with each other</i>
Inhalation	irritating; high concentration of vapour or mist may cause pulmonary oedema
Ingestion	irritating to mouth and throat – not a route of industrial exposure

Effects, Chronic Exposure

General	prolonged exposure may cause dermatitis; severe irritancy makes prolonged exposure unlikely
Sensitising	skin sensitiser in animals; probably also sensitising in humans
Carcinogen/Tumorigen	carcinogenic in rodents under laboratory conditions; considered to have low carcinogenic potential, unlikely to be realised under conditions of industrial exposure <i>not listed as a</i>
<i>carcinogen</i>	
Reproductive Effect	no known effect in humans or animals
Mutagen	no known effect on humans or animals
Synergistic With	not known
LD ₅₀ (oral)	4425, 5760 & 6700mg/kg (rat), 4400mg/kg (mouse), 3550mg/kg (rabbit),
LD ₅₀ (skin)	7580, 8500 & 14,160mg/kg (rabbit), 12,000mg/kg (rat)
LC ₅₀ (inhalation)	>240ppm (rat)

12. ECOLOGICAL INFORMATION

Bioaccumulation	theoretically, ethylhexyl acrylate could be a bioaccumulator; however, relatively rapid biodegradation may prevent this
Bioaccumulation	this product is not a bioaccumulator
Biodegradation	degrades readily in the presence of oxygen; 1-9% degradation in 5 days, 50-90% in 2 weeks
Abiotic Degradation	reacts with atmospheric hydroxyl radicals; its estimated ½-life in air is 19 hours
Mobility in soil, water	poorly water soluble; moves slowly in soil and the water table
Aquatic Toxicity	
LC ₅₀ (Fish, 72hr)	200mg/litre (Carassius auratus), 23mg/litre (Leuciscus Idus & Idus Idus)
EC ₅₀ (Crustacea, 48hr)	17.5mg/litre (Daphnia magna)
EC ₅₀ (Algæ)	44 & 47mg/litre (Scenedesmus subspicatus)
EC ₅₀ (Bacteria)	1mg/litre (Photobacterium phosphoreum), >100 & >10,000mg/litre (Pseudomonas putida)

13. DISPOSAL

Waste Disposal	do not flush to sewer , recycle if possible, local regulations may permit disposal in sanitary landfill, may be incinerated in approved facility; biodigestion is also an effective destruction technique
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- not regulated for transport
	Shipping Name	not regulated for transport
	Class	not regulated for transport
	Packing Group	not regulated for transport
U.S.A. 49 CFR	PIN	NA-1993
	Shipping Name	COMBUSTIBLE LIQUIDS N.O.S. (2-ethylhexyl acrylate)
	Class	Class 3; combustible
	Packing Group	none
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

FDA Requirements: 2-Ethylhexyl acrylate is an indirect food additive for use only as a component of adhesives.

16. OTHER INFORMATION

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

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

Preparation Date: **December 2003**, Revision Dates: **January 2005, January 2009, January 2012**

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