Material Safety Data Sheet

Ethyl Acrylate

Section 1 - Product Identification

Synonyms : Acrylic Acid ethyl ester

Molecular Weight : 100.12 g/mol

Chemical Formula : $CH_2 = CHCOOC_2H_5$

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Recommended use of the chemical and restrictions on use:

Laboratory Chemicals, Manufacturing of polymers

Section 2 – Composition/Information on Ingredients

Chemical Name	EC/CAS No	Purity, %
Ethyl Acrylate	205-438-8/140-88-5	< 100

Section 3 – Hazards Identification

3.1 Classification of the substance or mixture

Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 4), H312

Skin corrosion/irritation (Category 2), H315

Serious eye damage/eye irritation (Category 2), H319

Skin sensitisation (Category 1), H317

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

3.2 Label elements

Hazard statement(s)

H225 Highly flammable liquid and vapour.

H302 + H312 Harmful if swallowed or in contact with skin

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H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

Precautionary statement(s)

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Response

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

3.3 Other hazards

None

Section 4 – First-Aid Measures

4.1. Description of first aid mesaures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

Most important known symptoms and effects are described in the labelling (section 3.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

N.A.

Section 5 – Fire Fighting Measures

5.1. Suitable Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Specific hazards arising from the chemical

Carbon Oxides

5.3. Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4. Further Information

Use water spray to cool unopened containers.

Section 6 – Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and

place in container for disposal according to local regulations (see section 13).

Section 7 – Handling and Storage

7.1. Precautions for safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. For precautions see section 2.2.

7.2. Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Light sensitive. Do not store under inert atmosphere. Polymerization can occur.

Section 8 – Exposure Controls/Personal Protection

8.1. Control parameters

Component	CAS-No	Value	Control	Basis
Ethyl acrylate	140-88-5	PEL (long term)	5ppm, 20mg/m^3	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances
		PEL (short term)	15ppm, 61mg/m^3	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

8.2. Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Splash contact
Material: butyl-rubber
Minimum layer thickness: 0,3 mm
Break through time: 104 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN14387) respirator cartridges as a backup, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

8.4 Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9 – Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance : Colourless liquid
Odour : Pungent
Odour threshold : N.A.
pH @ 20°C : No data available
Melting point : -71°C – lit.
Boiling point : 99°C – lit.

Flash point : 9°C – lit.

Evaporation rate : N.A.

Flammability : N.A.

Upper/lower flammability or explosive limits : UFL 12.1%, LFL 1.8% (V)

Vapour pressure : 31 mmHg at 20°C

Vapour density : 3.46 (Air = 1.0)

Relative density : 0.918 g/mL at 25°C

Solubility in water : 20 g/L at 20°C

Partition coefficient: n-octanol/water : 1.18 at 25°C

Auto-ignition temperature : 372°C at 1.01325 hPa

Decomposition temperature : N.A.

Viscosity : N.A.

Explosive properties: N.A.

Oxidizing properties: N.A.

Section 10 – Stability and Reactivity

10.1. Reactivity

N.A.

10.2. Chemical stability

Stable under recommended storage conditions

10.3. Possibility of hazardous reactions

N.A.

10.4. Conditions to avoid:

Oxygen free atmosphere. May polymerize on exposure to light. Heat, flames and sparks

10.5. Incompatible materials

Strong oxidizing agents, peroxides.

10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – carbon oxides

In the event of fire, see section 5.

Other decomposition products – No data available.

Section 11 – Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 1.120 mg/kg(Ethyl acrylate)

LC50 Inhalation - Rat - male - 4 h - 9 mg/l(Ethyl acrylate)

LD50 Dermal - Rabbit - 1.800 mg/kg(Ethyl acrylate)

Skin corrosion/irritation

Skin – Rabbit (Ethyl acrylate)

Result: Irritating to skin. - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes – Rabbit (Ethyl acrylate)

Result: Irritating to eyes. - 72 h

(Draize Test)

Respiratory or skin sensitisation

Mouse(Ethyl acrylate)

Result: May cause sensitisation by skin contact.

(OECD Test Guideline 429)

Germ cell mutagenicity

Reverse mutation assay (Ethyl acrylate)

Salmonella typhimurium

Result: negative

OECD Test Guideline 474 (Ethyl acrylate)

Mouse - male

Result: negative

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Ethyl acrylate)

Reproductive toxicity

Specific target organ toxicity - single exposure

May cause respiratory irritation (Ethyl acrylate)

Specific target organ toxicity - repeated exposure

N.A.

Aspiration hazard

N.A.

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 55 mg/kg - Lowest observed adverse effect level - 110 mg/kg(Ethyl acrylate) RTECS: AT0700000

Nausea, Headache, Drowsiness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated (Ethyl acrylate).

Section 12 – Ecological Information

12.1.Toxicity

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) – 2.5 mg/l - 96h (Ethyl acrylate) flow-through test LC50 - Cyprinodon variegatus (sheepshead minnow) - 2 mg/l - 96h (Ethyl acrylate)

Toxicity to daphnia and other aquatic invertebrates – flow-through test EC50 – Daphnia magna (Water flea) – 7.9 mg/L – 48h (Ethyl acrylate)

Toxicity to algae - Growth inhibition EC50 - Pseudokirchneriella subcapitata - 5,5 mg/l – 96h (Ethyl acrylate) (OECD Test Guideline 201)

12.2. Persistence and degradability

Biodegradability aerobic - Exposure time 28 days (Ethyl acrylate), result: 80 - 90 % - Readily biodegradable. (OECD Test Guideline 310)

12.3. Bioaccumulative potential

N.A

12.4. Mobility in soil

N.A

12.5. Other adverse effects

N.A

Section 13 – Disposal Considerations

13.1. Disposal methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company

Section 14 – Transport Information

14.1. UN number : ADR/RID: 1917, IMDG: 1917, IATA-DGR: 1917

14.2. UN proper shipping name : N.A

14.3. Transport of hazard classes : ADR/RID: 3, IMDG: 3, IATA-DGR: 3

14.4. Packing group : ADR/RID: II, IMDG: II, IATA-DGR: II

14.5. Environmental hazards : ADR/RID: no, IMDG Marine pollutant: no, IATA-DGR: no

14.6. Special precautions for user : N.A

14.7. Incompatible materials: N.A

Section 15 – Regulatory Information

15.1. Safety, health and environmental regulations for the substance/mixture

N.A

Section 16 : Additional Information

16.1. Full text of H-Statements referred to

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

16.2. Disclaimer of Liability

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