Chemical Safety Data Sheet MSDS / SDS

Ethyl acrylate SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Ethyl acrylate

CAS: 140-88-5

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 2
Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Dermal
Skin irritation, Category 2
Eye irritation, Category 2
Skin sensitization, Category 1
Acute toxicity - Category 4, Inhalation
Specific target organ toxicity – single exposure, Category 3

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H312 Harmful in contact with skin
H315 Causes skin irritation
H319 Causes serious eye irritation
H317 May cause an allergic skin reaction
H332 Harmful if inhaled
H335 May cause respiratory irritation

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P317 If skin irritation occurs: Get medical help.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P317 If skin irritation or rash occurs: Get medical help.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P319 Get medical help if you feel unwell.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Ethyl acrylate
Common names and synonyms:	Ethyl acrylate
CAS number:	140-88-5

EC number:	205-438-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

May cause irritation and burns of eyes and skin. Exposure to excessive vapor concentrations can also cause drowsiness accompanied by nausea, headache, or extreme irritation of the respiratory tract. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Esters and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Use water spray to keep fire-exposed containers cool. Use fine spray or fog to control fire by preventing its spread and absorbing

some of its heat. Solid streams of water may be ineffective or may cause frothing. Use water spray, dry chemical, foam, or carbon dioxide. Fight fire from protected location or maximum possible distance. Ethyl acrylate, inhibited

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic and irritating vapors generated when heated. Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. May polymerize and cause container to explode. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Remove all ignition sources. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Remove all ignition sources. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Do NOT use compressed air for filling, discharging, or handling. Use non-sparking handtools. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Cool. Keep in the dark. Store only if stabilized.Store in away from heat, oxidizers, and sunlight. Outside or detached storage is preferred. Separate from any oxidizers, peroxides, or other initiators. Ethyl acrylate, inhibited

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 15 ppm as STEL; A4 (not classifiable as a human carcinogen).MAK: 8.3 mg/m3, 2 ppm; peak limitation category: I(2); skin absorption (H); sensitization of skin (SH); pregnancy risk group: C.EU-OEL: 21 mg/m3, 5 ppm as TWA; 42 mg/m3, 10 ppm as STEL

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

Skin protection

Protective clothing. Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Ethyl acrylate, stabilized is a clear colorless liquid with an acrid odor. Flash point 60°F. May polymerize exothermically if heated or contaminated. If the polymerization takes place inside a container, the container may rupture violently. Auto ignition temperature 721°F (383°C) (NTP). Less dense than water. Vapors heavier than air. Used to make paints and plastics.
Colour:	Colorless liquid
Odour:	Acrid penetrating odor
Melting point/freezing point:	245°C(lit.)
Boiling point or initial boiling point and boiling range:	99°C(lit.)
Flammability:	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 1.4% by volume; upper flammable limit: 14% by volume /Ethyl acrylate, inhibited/
Flash point:	9°C
Auto-ignition temperature:	721°F
Decomposition temperature:	no data available
pH:	no data available

Kinematic viscosity:	no data available
Solubility:	10 to 50 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Kow = 1.32
Vapour pressure:	31 mm Hg (20 °C)
Density and/or relative density:	0.918g/mLat 25°C(lit.)
Relative vapour density:	3.5 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

NIOSH has recommended that ethyl acrylate be treated as a potential human carcinogen.
The substance may spontaneously polymerize due to warming, under the influence of light and on contact with peroxides.

Chemical stability

Easily polymerizes on standing; polymerization process speeded up by heat, light, and peroxides. If pure, the monomer can be stored below +10 deg C without incurring polymerization.

Possibility of hazardous reactions

Flammable liquid. A very dangerous fire hazard when exposed to heat or flame.The vapour mixes well with air, explosive mixtures are easily formed. Vapours are uninhibited and may polymerize, causing blockage of vents.A flammable liquid, confirmed carcinogen. It can react vigorously with oxidizing reagents, peroxides,strong alkalis and polymerization initiators. [NTP] It reacts violently with chlorosulfonic acid [Sax, 9th ed., 1996, p. 1515]. When an inhibited monomer was placed in a clear glass bottle exposed to sunlight, exothermic polymerization set in and caused the bottle to burst. The use of brown glass or metal containers and increase in inhibitor concentration (to 200 ppm; tenfold) was recommended [MCA Case History No. 1759]. It may polymerize when exposed to light and it is subject to slow hydrolysis. Inhibitors do not function in the absence of air. Solutions in DMSO are stable for 24 hours under normal lab conditions. [NTP].

Conditions to avoid

no data available

Incompatible materials

Material will react with strong acids and alkalies. Ethyl acrylate, inhibited

Hazardous decomposition products

When heated to decomp it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 760-1020 mg/kg

Inhalation: LC50 Rat inhalation 1000-2000 ppm/4 hr

Dermal: LD50 Rabbit percutaneous 1800 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

NTP delisted ethyl acrylate as a suspected human carcinogen because the forestomach tumors in rats and mice appeared to arise

from local tissue irritation and ulceration, rather than from a systemic toxicity, and occurred only at oral doses unlikely to be achieved by chronic human exposure. Ethyl acrylate remains an OSHA Select Carcinogen, due to its evaluation (Group 2B) by the IARC.

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

Repeated or prolonged contact may cause skin sensitization. Tumours have been detected in experimental animals but may not be relevant to humans.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow, age 32 days, length 18.7 mm, weight 0.095 g); Conditions: freshwater, flow through, 25.3 deg C, pH 7.5, hardness 46.9 mg/L CaCO3, alkalinity 39.7 mg/L CaCO3, dissolved oxygen 6.8 mg/L; Concentration: 2500 ug/L for 96 hr (95% confidence interval: 2310-2700 ug/L) /99% purity

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: Algae: Microcystis aeruginosa: inhibition of cell multiplication starts at 14 mg/L

Toxicity to microorganisms: no data available

Persistence and degradability

AEROBIC: Ethyl acrylate readily biodegrades in screening tests using sewage seed both in fresh and salt water(1). The percent of theoretical BOD is 28 and 11%, respectively, after 5 days; after acclimation, the BOD after 5 days increased to 66% of theoretical(1). Ethyl acrylate, present at 100 mg/L, reached 52% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(2). In three separate Zahn-Wellens tests, 60, 100, and >60% total organic carbon

was removed in 3 hours, 7 days, and 11 days, respectively(3). Five day BOD for ethyl acrylate were 28, 66 and 11% in nonacclimated fresh dilution water, acclimated fresh dilution water and nonacclimated salt dilution water(3). The BOD5/COD ratio for ethyl acrylate was determined to be 0.77, which is indicative of significant potential for biodegradability(4).

Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for ethyl acrylate(SRC), using a log Kow of 1.32(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

Koc values for ethyl acrylate have been reported as 4 in Washington clay/loam (29% sand, 42% silt, 29% clay, 3.39% organic carbon, pH 6.0), 23 in Canfield loam (45% sand, 42% silt, 13% clay, 4.58% organic carbon, pH 6.1), 40 in Ellsworth loam (35% sand, 40% silt, 25% clay, 1.42% organic carbon, pH 7.2), 85 in Tyner loamy sand (79% sand, 14% silt, 7% clay, 0.46% organic carbon, pH 5.2), and 81 in sandy loam sediment (53% sand, 28% silt, 19% clay, 1.23% organic carbon, pH 7.5)(1). According to a classification scheme(2), these Koc values suggest that ethyl acrylate is expected to have very high to high mobility in soil. Ethyl acrylate is highly soluble in water and, therefore, is not expected to partition to sediments(1).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1917 (For reference only, please check.)
IMDG: UN1917 (For reference only, please check.)
IATA: UN1917 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: ETHYL ACRYLATE, STABILIZED (For reference only, please check.)
IMDG: ETHYL ACRYLATE, STABILIZED (For reference only, please check.)
IATA: ETHYL ACRYLATE, STABILIZED (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)
IMDG: 3 (For reference only, please check.)
IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: II (For reference only, please check.)
IMDG: II (For reference only, please check.)
IATA: II (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert.Do NOT take working clothes home.