SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Version: 1.0

Creation Date: Jan 1.2023

1.Identification

1.1GHS Product identifier

Product name	Ethyl methacrylate

1.2Other means of identification

Product number	-
Other names	Methacrylic acid-ethyl ester

1.3Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Food additives -> Flavoring Agents
Uses advised against	no data available

1.4Supplier's details

Company	SHANDONG WONDERFUL NEW MATERIAL CO.,LTD
Address	FINE CHEMICAL PARK,LUSHAN PROJECT AREA,YISHUI LINYI SHANDONG CHINA
Telephone	+86-533-6095186
Fax	+86-533-6095186

1.5Emergency phone number

Emergency phone number	+86-533-6095186
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2.Hazard identification

2.1Classification of the substance or mixture

Flammable liquids, Category 2

Skin irritation, Category 2

Eye irritation, Category 2

Skin sensitization, Category 1

Specific target organ toxicity \u2013 single exposure, Category 3

2.2GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour

H315 Causes skin irritation

H319 Causes serious eye irritation

H317 May cause an allergic skin reaction

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.

P264 Wash ... thoroughly after handling.

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 skin with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P313 If skin irritation occurs: Get medical advice/attention.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

	P312 Call a POISON CENTER/doctor/\u2026if 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 ...

2.3Other hazards which do not result in classification

none

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ethyl methacrylate	Ethyl methacrylate	97-63-2	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

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

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

In case of eye contact

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

If swallowed

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

4.2Most important symptoms/effects, acute and delayed

Inhalation may cause irritation of the mucous membrane. Ingestion causes irritation of mouth and stomach. Contact with liquid irritates eyes and skin. (USCG, 1999)

4.3Indication 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/

5.Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

Use dry chemical, carbon dioxide, or alcohol foam extinguishers. Vapors are heavier than air and will collect in low areas. Vapors may travel long distances to ignition sources and flashback. Vapors in confined areas may explode when exposed to fire. Containers may explode in fire. Storage containers and parts of containers may rocket great distances, in many directions. If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated waters. Notify local health and fire officials and pollution control agencies. From a secure, explosion-proof location, use water spray to cool exposed containers. If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors or shows any signs of deforming), withdraw immediately to a secure position.

5.2Specific hazards arising from the chemical

Behavior in Fire: Sealed containers may rupture explosively if hot. Heat can cause a violent polymerization reaction with rapid release of energy. Vapors are heavier than air and can travel to a source of ignition and flash back. (USCG, 1999)

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2Environmental precautions

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: chemical protection suit and filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3Methods 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.

7.Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants. Cool. Keep in the dark. Store only if stabilized.Before entering confined space where this chemical may be present, check to make sure that an explosive concentration does not exist. Store in tightly closed containers in a cool, well ventilated area away from oxidizers (such as perchlorates, peroxides, permanganates, chlorates, and nitrates). Sources of ignition, such as smoking and open flames, are prohibited where ethyl methacrylate is handled, used, or stored. Metal containers involving the transfer of 5 gallons or more of ethyl methacrylate should be grounded and bonded. Drums must be equipped with self-closing valves, pressure vacuum bungs, and flame arresters. Use only nonsparking tools and equipment, especially when opening and closing containers of ethyl methacrylate.

8.Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	colourless liquid with an unpleasant odour(well known as Plexiglass in the polymerized form)
Colour	Colorless, liquid
Odour	Acrid odor
Melting point/ freezing point	-75\u00baC
Boiling point or initial boiling point and boiling range	118-119\u00b0C(lit.)
Flammability	Highly flammable.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 1.8% by volume
Flash point	19\u00b0C
Auto-ignition temperature	410.56\u00b0C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.92 mPa (cP)
Solubility	In water:4 g/L (20 \u00baC)
Partition coefficient n-octanol/water (log value)	log Kow = 1.94
Vapour pressure	15 mm Hg (20 \u00b0C)
Density and/or relative density	0.917g/mLat 25\u00b0C(lit.)
Relative vapour density	>3.9 (vs air)
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Stable under recommended storage conditions.

10.3Possibility of hazardous reactions

A very dangerous fire and explosion hazard when exposed to heat, sparks, or flame; can react with oxidizing materials.The vapour mixes well with air, explosive mixtures are easily formed. Vapours are uninhibited and may polymerize, causing blockage of vents.May polymerize if heated for prolonged periods or accidentally contaminated. If polymerization takes place inside a container, the container may violently rupture. Can react with oxidizing materials. When heated to decomposition it emits irritating fumes and acrid smoke [Sax, 9th ed., 1996, p. 1576].

10.4Conditions to avoid

no data available

10.5Incompatible materials

Forms explosive mixture with air. Incompatible with strong acids, amines, ozidizers. Corrodes some metals.

10.6Hazardous decomposition products

When heated to decomposition, it emits acrid smoke and irritating fumes.

11.Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 14,800 mg/kg
- Inhalation: LC50 Rat inhalation 8300 ppm/4 hr
- Dermal: no data available

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

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12.Ecological information

12.1Toxicity

- Toxicity to fish: LC50; Species: Oncorhynchus mykiss (Rainbow trout); Conditions: flow-through; Concentration: 100 mg/L for 96 hr
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (water flea); Conditions: flow-through; Concentration: >66 mg/L for 48 hr; Effect: Immobilization
- Toxicity to algae: EC50; Species: Pseudokirchneriella subcapitata (algae); Conditions: static, closed vessel; Concentration: >110 mg/L for 72 hr; Effect: growth rate
- Toxicity to microorganisms: no data available

12.2Persistence and degradability

AEROBIC: In a Closed Bottle test, ethyl methacrylate released 69% of theoretical carbon dioxide evolution after 28 days(1). Ethyl methacrylate has been listed as being "well biodegradable" in the Japanese MITI test which utilizes 100 ppm test compound incubated at 25\u00b0C for 2 weeks in activated sludge at 30 ppm(2). Ethyl methacrylate was found to biodegrade 79% in 28 days using the OECD 301D method, classifying it as readily biodegradable(3).

12.3Bioaccumulative potential

An estimated BCF of 9 was calculated in fish for ethyl methacrylate(SRC), using a log Kow of 1.94(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).

12.4Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of ethyl methacrylate can be estimated to be 17(SRC). According to a classification scheme(2), this estimated Koc value suggests that ethyl acrylate is expected to have very high mobility in soil.

12.5Other adverse effects

no data available

13.Disposal considerations

13.1Disposal 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.

14.Transport information

14.1UN Number

ADR/RID: UN2277 IMDG: UN2277 IATA: UN2277

14.2UN Proper Shipping Name

ADR/RID: ETHYL METHACRYLATE, STABILIZED

IMDG: ETHYL METHACRYLATE, STABILIZED

IATA: ETHYL METHACRYLATE, STABILIZED

14.3Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4Packing group, if applicable

ADR/RID: II IMDG: II IATA: II

14.5Environmental hazards

ADR/RID: no IMDG: no IATA: no

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Ethyl methacrylate	Ethyl methacrylate	97-63-2	none
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16.Other information

Information on revision

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