SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0
Creation Date: July 15, 2024
Revision Date: July 15, 2024

1. Identification

1.1 GHS Product identifier

Product name Ethyl acetate

1.2 Other means of identification

Product number E20001

Other names

1.3 Recommended use of the chemical and restrictions on use

Identified uses Food additives -> Flavoring Agents

Uses advised against no data available

1.4 Supplier's details

Company Tianjin Psaitong Biomedical Technology Co., Ltd
Beijing Psaitong Biotechnology Co., Ltd

Address Building 145, Yougu New Science Park, Qingguang Town, Beichen District, Tianjin City

Tel/Fax +86-10-60605840

1.5 Emergency phone number

Emergency phone number +86-10-60605840

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2. Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 2
Eye irritation, Category 2
Specific target organ toxicity – single exposure, Category 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s) H225 Highly flammable liquid and vapour
H319 Causes serious eye irritation
H336 May cause drowsiness or dizziness

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. 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. 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. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 Call a POISON CENTER/doctor/…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.

2.3 Other hazards which do not result in classification

no data available

3. Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ethyl acetate	Ethyl acetate	141-78-6	205-500-4	100%

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Medical attention is required. Consult a doctor. Show this safety data sheet (SDS) to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Rinse contaminated clothes (fire hazard) with plenty of water. Remove contaminated clothes. Rinse skin with plenty of water or shower.

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Following ingestion

Rinse mouth. Seek medical attention if you feel unwell.

4.2 Most important symptoms/effects, acute and delayed

Headache, irritation of respiratory passages and eyes, dizziness and nausea, weakness, loss of consciousness. (USCG, 1999)

4.3 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

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Cool exposed containers with water.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 129 [Flammable Liquids (Water-Miscible / Noxious)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

5.3 Special protective actions for fire-fighters

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

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT wash away into sewer. 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.

6.2 Environmental precautions

Remove all ignition sources. Evacuate danger area! Consult an expert! Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT wash away into sewer. 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.

6.3 Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. 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.; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.; Methods and materials 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.

7. Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. Closed system, ventilation, explosion-proof electrical equipment and lighting. Use non-sparking handtools. Do NOT use compressed air for filling, discharging, or handling. 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.

7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants, strong bases and strong acids.Keep tightly closed in cool place.

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 400 ppm as TWA.MAK: 750 mg/m3, 200 ppm; peak limitation category: I(2); pregnancy risk group: C.EU-OEL: 734 mg/m3, 200 ppm as TWA; 1468 mg/m3, 400 ppm as STEL

8.2 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.

8.3 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 gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	Liquid.
Colour	Clear, volatile
Odour	CHARACTERISTIC ETHER-LIKE ODOR REMINISCENT OF PINEAPPLE.
Melting point/ freezing point	-83.6 °C. Atm. press.:1 atm.
Boiling point or initial boiling point and boiling range	77.11 °C. Atm. press.:1 atm.
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 2.2%; upper 11.5% by volume in air
Flash point	-4 °C. Atm. press.:1 atm.
Auto-ignition temperature	427 °C. Atm. press.:1 atm.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.423 mPa.s at 25 deg C
Solubility	Insoluble in water
Partition coefficient n-octanol/water	log Pow = 0.73. Temperature:20 °C.
Vapour pressure	93.2 mm Hg. Temperature:25 °C. Remarks:Equivalent to 122 hPa. Value of 93.66 also quoted and referenced to Daubert.
Density and/or relative density	900.27 kg/m³. Temperature:20 °C.
Relative vapour density	3 (20 °C, vs air)
Particle characteristics	no data available

10. Stability and reactivity

10.1 Reactivity

2000 ppm (Based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.)
Reacts with strong oxidants. This generates fire and explosion hazard. Reacts violently with strong bases and strong acids. Attacks rubber and some forms of plastic.

10.2 Chemical stability

Slowly decomp by moisture.

10.3 Possibility of hazardous reactions

A very dangerous fire hazard when exposed to heat or flame.The vapour is heavier than air and may travel along the ground; distant ignition possible.ETHYL ACETATE is also sensitive to heat. On prolonged storage, materials containing similar functional groups have formed explosive peroxides. This chemical may ignite or explode with lithium aluminum hydride. It may also ignite with potassium tert-butoxide. It is incompatible with nitrates, strong alkalis and strong acids. It will attack some forms of plastics, rubber and coatings. It is incompatible with oxidizers such as hydrogen peroxide, nitric acid, perchloric acid and chromium trioxide. Violent reactions occur with chlorosulfonic acid. (NTP, 1992). $SOCl_2$ reacts with esters, such as ethyl acetate, forming toxic SO_2 gas and water soluble/toxic acyl chlorides, catalyzed by Fe or Zn (Spagnuolo, C.J. et al. 1992. Chemical and Engineering News 70(22):2.).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

can react vigorously with oxidizing materials ... Potentially explosive reaction with lithium tetrahydroaluminate. Ignites on contact with potassium teri-butoxide. Violent reaction with chlorosulfonic acid, ($LiAlH_2$ + 2-chloromethyl furan), oleum.

10.6 Hazardous decomposition products

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

11. Toxicological information

Acute toxicity

- Oral: LD50 - rat (female) - 11.3 mL/kg bw. Remarks:No data on confidence limits. LD50 is equivalent to 10,200 mg/kg.
- Inhalation: LC50 Mouse inhalation 1500 ppm/4hr
- 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

The substance is mildly irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system. Exposure far above the OEL could cause lowering of consciousness.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking.

Aspiration hazard

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

12. Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow) age 29-30 days, length 18.2 mm, weight 0.106 g; Conditions: freshwater, flow through, 24.3 deg C, pH 7.4, hardness 45.0 mg/L CaCO3, alkalinity 37.0 mg/L CaCO3, dissolved oxygen 6.7 mg/L; Concentration: 230000 ug/L for 96 hr (95% confidence interval: 220000-250000 ug/L) /99+% purity
- Toxicity to daphnia and other aquatic invertebrates: IC50 - Artemia salina - 346 mg/L - 24 h.
- Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 5 600 mg/L - 48 h.
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Ethyl acetate, present at 100 mg/L, reached 95% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1). A review concluded that ethyl acetate is easily removed by biological treatment(2). Reported 5 day BOD values using a sewage inoculum range from 36-68% of theoretical(3-6) with the value being somewhat reduced in salt water(3). One investigator reported that ethyl acetate was completely degraded in 20 hr using activated sludge(7). In a bench-scale continuous-flow activated sludge reactor with an 8 hour retention time, 99.9% removal including 17% volatilization loss) was obtained, with 80% of the theoretical BOD(8). Ethyl acetate was 90% biooxidized in a 20-day BOD test using a filtered raw sewage seed; it was biooxidized 77% in a 28-day OECD closed-bottle test(9). A screening procedure that was systematically applied to a large number of organic chemicals ranked ethyl acetate as being completely biodegraded in a short time by general microorganisms(10). After a 5 hr lag, 43 to 53% of theoretical BOD was obtained in 50 to 70 hr(10). In screening tests, ethyl acetate, present at a concentration of 5 ppm, reached 26.6 and 57.1% of its theoretical BOD in 5 days using the standard dilution method and seawater dilution method, respectively(11). 99.9% removal of ethyl acetate was observed in a complete mix continuous-flow activated sludge system; 93% of this removal was attributed to biodegradation(12).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated for ethyl acetate(SRC), using a log Kow of 0.73(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).

12.4 Mobility in soil

The Koc of ethyl acetate is estimated as 18(SRC), using a log Kow of 0.73(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that ethyl acetate is expected to have very high mobility in soil(SRC). A log Ki (snow surface/air (cu m/sq m)) of -3.69 has been reported for sorption to snow(4).

12.5 Other adverse effects

no data available

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13. Disposal considerations

13.1 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.

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14. Transport information

14.1 UN Number

ADR/RID: UN1173 (For reference only, please check.)	IMDG: UN1173 (For reference only, please check.)	IATA: UN1173 (For reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 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.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

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

no data available

15. Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Ethyl acetate	Ethyl acetate	141-78-6	205-500-4
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			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

16. Other information

Information on revision

Creation Date	July 15, 2024
Revision Date	July 15, 2024

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

Do NOT take working clothes home.
