# SAFETY DATA SHEET

## 1. Identification

**Product identifier** **Ethyl Acetate**

**Other means of identification**

**Catalog number** 1265402

**CAS number** 141-78-6

**Synonyms** Acetic ether * Ethyl ethanoate

**Chemical name** Acetic acid, ethyl ester

**Recommended use** Specified quality tests and assay use only.

**Recommended restrictions** Not for use as a drug. Not for administration to humans or animals.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** U. S. Pharmacopeia

**Address** 12601 Twinbrook Parkway
Rockville
MD
20852-1790
United States

**Telephone** RS Technical Services 301-816-8129

**Website** www.usp.org

**E-mail** RSTECH@usp.org

**Emergency phone number** CHEMTREC within US & Canada 1-800-424-9300
CHEMTREC outside US & Canada +1 703-527-3887

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Flammable liquids | Category 2 |
| **Health hazards** | Serious eye damage/eye irritation | Category 2A |
| | Specific target organ toxicity, single exposure | Category 3 narcotic effects |

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Signal word** Danger

**Hazard statement** Highly flammable liquid and vapor. Causes serious eye irritation. May cause drowsiness or dizziness.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.

**Response** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media for extinction.

**Storage** Keep cool. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

**Substance**

| Chemical name | Common name and synonyms | CAS number | % |
|---|---|---|---|
| Ethyl Acetate | Acetic ether<br>Ethyl ethanoate | 141-78-6 | 100 |

## 4. First-aid measures

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact** Take off immediately all contaminated clothing. Wash off with soap and water. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** Central nervous system effects.

**Indication of immediate medical attention and special treatment needed** Provide general supportive measures and treat symptomatically.

**General information** Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

## 5. Fire-fighting measures

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical** No unusual fire or explosion hazards noted.

**Special protective equipment and precautions for firefighters** Wear suitable protective equipment.

**Fire fighting equipment/instructions** As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing. Use water spray to cool unopened containers.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** Highly flammable liquid and vapor.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Wear appropriate personal protective equipment. Avoid inhalation of vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Remove sources of ignition. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Clean surface thoroughly to remove residual contamination.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

## 7. Handling and storage

**Precautions for safe handling** As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

**Conditions for safe storage, including any incompatibilities** Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

## 8. Exposure controls/personal protection

**Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Material | Type | Value |
|---|---|---|
| Ethyl Acetate (CAS 141-78-6) | PEL | 1400 mg/m3<br>400 ppm |

**US. ACGIH Threshold Limit Values**

| Material | Type | Value |
|---|---|---|
| Ethyl Acetate (CAS 141-78-6) | TWA | 400 ppm |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Material | Type | Value |
|---|---|---|
| Ethyl Acetate (CAS 141-78-6) | TWA | 1400 mg/m3<br>400 ppm |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Skin protection**

**Hand protection** Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

**Other** Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

**Respiratory protection** Respirators are generally not required for laboratory operations. Chose respiratory protection appropriate to the task and the level of existing engineering controls.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Handling practices in this SDS are recommendations for laboratory use of reference standards. Procedures for any other uses or quantities should be determined after an appropriate assessment.

## 9. Physical and chemical properties

**Appearance** Appearance descriptions are general information and not specific to any USP lot.

**Physical state** Liquid.

**Form** Liquid.

**Color** Colorless. Clear.

**Odor** Fruity odor.

**Odor threshold** 18 ppm (detectable); 32 ppm (recognizable)

**pH** Not available.

**Melting point/freezing point** -117.4 °F (-83 °C)

**Initial boiling point and boiling range** 170.6 °F (77 °C)

**Flash point** 24.8 °F (-4.0 °C) Closed Cup
45.0 °F (7.2 °C) Open Cup

**Evaporation rate** 6.2 (butyl acetate=1)

**Flammability (solid, gas)** Not applicable.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** 2 %

**Flammability limit - upper (%)** 11.5 %

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** 12.43 kPa at 25 °C

| | |
|---|---|
| **Vapor density** | 3.04 (air=1) |
| **Relative density** | Not available. |
| **Solubility(ies)** | |
| **Solubility (water)** | Soluble. |
| **Solubility (other)** | Acetone: Soluble.<br>Alcohol: Soluble.<br>Benzene: Soluble.<br>Chloroform: Soluble.<br>Diethyl ether: Soluble.<br>Ethanol: Soluble. |
| **Partition coefficient (n-octanol/water)** | 0.6 - 0.73 |
| **Auto-ignition temperature** | 798.8 °F (426 °C) |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |
| **Other information** | |
| **Chemical family** | Ester. |
| **Dynamic viscosity** | 0.42 mPa.s (77 °F (25 °C)) |
| **Molecular formula** | C4H8O2 |
| **Molecular weight** | 88.11 |
| **Percent volatile** | 100 % |
| **Specific gravity** | 0.9 at 20 °C |
| **Surface tension** | 24 mN/m (68 °F (20 °C)) |
| **VOC** | 100 % |

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | No dangerous reaction known under conditions of normal use. |
| **Conditions to avoid** | Contact with incompatible materials. Sparks. Flames. Avoid temperatures exceeding the flash point. |
| **Incompatible materials** | Strong oxidizing agents. Nitrates. Alkaline metals. |
| **Hazardous decomposition products** | Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | May cause drowsiness and dizziness. |
| **Skin contact** | Health injuries are not known or expected under normal use. |
| **Eye contact** | Causes serious eye irritation. |
| **Ingestion** | Knowledge about health hazard is incomplete. |
| **Symptoms related to the physical, chemical, and toxicological characteristics** | Difficulty breathing. Irritant effects. Drowsiness. Gastrointestinal disturbances. Incoordination. Slurred speech. |

**Information on toxicological effects**

**Acute toxicity**

| Product | Species | Test Results |
|---|---|---|
| Ethyl Acetate (CAS 141-78-6) | | |
| **Acute** | | |
| **Dermal** | | |
| LD50 | Rabbit | > 20 ml/kg |
| **Inhalation** | | |
| LC50 | Mouse | 1500 mg/l, 4 Hours |
| | Rabbit | 2500 mg/l, 4 Hours |
| | Rat | 4000 mg/l, 4 Hours |

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Local effects**

Eye irritation
Result: Positive.
Species: Rabbit
Severity: Severe.
Skin irritation
Result: Negative.
Species: Rabbit
Severity: Mild.

**Respiratory or skin sensitization**

**Respiratory sensitization** Knowledge about health hazard is incomplete.

**Skin sensitization** Based on available data, the classification criteria are not met.

Guinea pig maximization test
Result: Negative.

**Germ cell mutagenicity** Knowledge about mutagenicity is incomplete.

**Mutagenicity**

Ames test
Result: Negative.
Ames test
Result: Positive.
Micronucleus test
Result: Negative.
Sister chromatid exchange
Result: Positive.

**Carcinogenicity** Knowledge about carcinogenicity is incomplete.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Not listed.

**Reproductive toxicity** Knowledge about health hazard is incomplete.
Ethyl acetate is hydrolyzed to acetic acid and ethanol in the human body. Ethanol is a known human reproductive hazard.

**Specific target organ toxicity - single exposure** Narcotic effects.

**Specific target organ toxicity - repeated exposure** Knowledge about health hazard is incomplete.

**Aspiration hazard** Knowledge about health hazard is incomplete.

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential**

**Octanol/water partition coefficient log Kow**

0.6 - 0.73

**Mobility in soil** No data available.

**Other adverse effects** The product contains volatile organic compounds which have a photochemical ozone creation potential.

## 13. Disposal considerations

**Disposal instructions** Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company. D001: Waste Flammable material with a flash point <140 F

**US RCRA Hazardous Waste U List: Reference**

Ethyl Acetate (CAS 141-78-6) U112

| | |
|---|---|
| **Waste from residues / unused products** | Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| **Contaminated packaging** | Since emptied containers may retain product residue, follow label warnings even after container is emptied. |

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN1173 |
| **UN proper shipping name** | Ethyl acetate |
| **Transport hazard class(es)** | |
| **Class** | 3 |
| **Subsidiary risk** | - |
| **Packing group** | II |
| **Packaging exceptions** | 150 |
| **Packaging non bulk** | 202 |
| **Packaging bulk** | 242 |

**IATA**

| | |
|---|---|
| **UN number** | UN1173 |
| **UN proper shipping name** | Ethyl acetate |
| **Transport hazard class(es)** | |
| **Class** | 3 |
| **Subsidiary risk** | - |
| **Packing group** | II |
| **Other information** | |
| **Passenger and cargo aircraft** | Allowed with restrictions. |
| **Cargo aircraft only** | Allowed with restrictions. |

| | |
|---|---|
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | Not established. |

**DOT**


**IATA**


| | |
|---|---|
| **General information** | It is the shipper's responsibility to determine the correct transport classification at the time of shipment. |

## 15. Regulatory information

| | |
|---|---|
| **US federal regulations** | CERCLA reportable quantity: 5000 lb (2270 kg) This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. |

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Ethyl Acetate (CAS 141-78-6) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Ethyl Acetate (CAS 141-78-6) Low priority

**US state regulations** California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 02-09-2006

**Revision date** 01-16-2018

**Version #** 06

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