

SAFETY DATA SHEET



1000 Tedia Way
Fairfield, Ohio 45014
USA
Email: tedia@tedia.com
Web: www.tedia.com

24-Hour Emergency Number (CHEMTREC)

USA: 800-424-9300
International: 703-527-3887

All non-emergency numbers should be directed
to Customer Service at 800-PURITY1

ETHYL ACETATE

SDS No. M0092

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ethyl Acetate

Synonyms: Acetic Acid Ethyl Ester; Acetic Ether; Acetidin; Acetoxyethane; Ethyl Acetic Ester; Ethyl Ethanoate, Venegar naphtha

Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

2. HAZARDS IDENTIFICATION



Classification:

Flammable Liquids: GHS Category 2

Eye Irritation: GHS Category 2A

Specific Target Organ Exposure, single exposure: GHS Category 3

Label Elements

Signal Word: DANGER!

Hazard Statements:

H225 – Highly flammable liquid and vapor

H303 – May be harmful if swallowed.

H316 – Causes mild skin irritation.

H320 – Causes eye irritation.

H333 – May be harmful if inhaled.

H336 – May cause drowsiness or dizziness

Precautionary Statements:

P210 – Keep away from heat/sparks/open flames/hot surface – No Smoking.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

Emergency Overview

High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract. Prolonged or repeated skin contact may cause drying, cracking, or irritation. Highly flammable liquid or vapor. Target Organs: Respiratory system, eyes, and skin.

HMIS Rating:

Health – 2* Flammability – 3 Physical Hazard – 1 PPE – User supplied

NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>CAS No</u>	<u>Percent</u>	<u>Hazardous</u>
Ethyl Acetate	141-78-6	100%	Yes

4. FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. If breathing is labored or with coughing, give 100% supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid.

Ingestion: Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Highly flammable liquid and vapor (GHS Category 2)

Auto-ignition Temperature: 426° C (790.8° F)

Flash Point: -4° C (24.8° F)

Flammable Limits: Lower Limit – 2.0 vol %, Upper Limit – 11.5 vol %

Products of Combustion: Will decompose into highly toxic and irritating gases (carbon monoxide, carbon dioxide, ethanol, and acetic acid) under fire conditions.

Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Specific Explosion Hazards: Vapors may form an explosive mixture with air.

Fire Fighting Media: Water may be ineffective. Use water spray, alcohol foam, carbon dioxide, or dry chemical.

National Fire Protective Association: Health - 1, Flammability - 3, Reactivity - 0

NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Provide ventilation to the affected area and remove all ignition sources. Avoid run-off into storm sewers and ditches that lead to waterways. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Use only non-sparking

tools and equipment. A vapor suppressing foam may be used. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away from all sources of ignition and oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Personal Protection: Wear protective chemical goggles or appropriate eye protection. Use appropriate protective gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits:

ACGIH – 400 ppm TWA;

NIOSH – 400 ppm TWA; 1400 mg/m³ TWA; 2000 ppm IDLH

OSHA Final PELs – 400 ppm TWA; 1400 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.

Odor: sweet fruity odor

Odor Threshold: 4 ppm

Molecular Formula: CH₃CO₂C₂H₅

Molecular Weight: 88.11

Auto-ignition Temperature: 426° C (790.8° F)

Flash Point: -4° C (24.8° F)

Flammable Limits: Lower Limit – 2.0 vol %, Upper Limit – 11.5 vol %

pH: Not available.

Boiling Point: 77° C @ 760 mm Hg

Freezing/Melting Point: -83° C

Decomposition Temperature: Not available

Specific Gravity: 0.9 g/cm³ @ 20° C

Vapor Density (Air=1): 3.04

Vapor Pressure: 73 mm Hg @ 20° C.

Evaporation Rate (Butyl acetate = 1): 6.2

Viscosity: 0.44 cP 25° C

Solubility: Slightly soluble

Conductivity: Conductive; Conductivity = 4.6x10⁴ pS/m; Dielectric Constant = 6.02; Relaxation Time Constant = 1.2x10⁻³ seconds

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Ignition sources, excess heat, extreme temperature, direct sunlight.

Incompatibility With Various Substances: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon, dioxide, ethanol, acetic acid.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact

Acute Exposure Hazards:

INHALATION HAZARD: May cause respiratory tract irritation. Inhalation of high concentrations may cause narcotic effects. May be harmful if inhaled.

INGESTION HAZARD: May cause irritation of the digestive tract. Ingestion of large amounts may cause nervous system depression. May cause headache, nausea, fatigue, and dizziness. The effects may be caused in part by ethanol, which is released when ethyl acetate is broken down in the body.

SKIN CONTACT HAZARD: May cause skin irritation. Prolonged or repeated exposure may cause dryness and cracking of skin. The majority of human studies indicate that ethyl acetate does not cause allergic skin reactions, but an allergy was reported in one case.

EYE CONTACT HAZARD: Causes eye irritation. Vapors may cause eye irritation.

Chronic Exposure Hazards: Chronic inhalation may cause effects similar to those of acute inhalation. Mice exposed to 4300 ppm and guinea pigs exposed to 2000 ppm 6 hours/day for 7 days developed minor blood changes and displayed loss of appetite. There is no indication of liver or kidney damage. Rabbits exposed to 4440 ppm 1 hour/day for 40 days developed secondary anemia, decreased hemoglobin levels, increased number of macrophages, congestion and fatty degeneration of various organs, and enlargement of the spleen. A reviewer suggested that the organ damage may have been due to impurities present in the ethyl acetate.

Animal Toxicity:

Inhalation, mouse: LC50 = 45,000 mg/m³/2H;

Oral, rat: LC50 = 5620 mg/kg;

Skin, rabbit: LC50 = 18,000 mg/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: Cytogenetic analysis: hamster fibroblast 9g/L Sex chromosome Loss/Non-disjunction: *S. cerevisiae* 24,400 ppm.

Neurotoxicity: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Fathead minnow; LC50 = 220-250 mg/L: 96H

Fish: Rainbow trout; LC50 = 350-600 mg/L: 96H

Aquatic invertebrates: water flea; LC50 = 2300-3090 mg/L: 24H; LC50 = 560 mg/L: 48H

Algae: EC50 = 4300 mg/L: 24H

Environmental Fate: Terrestrial: Expected to have high mobility in soil. Volatilization of ethyl acetate from moist soils is expected to be important. Aquatic: Not expected to adsorb to suspended solids and sediment in water. Atmospheric: Expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase ethyl acetate is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals. The half life for this reaction in air is expected to be 10 days. Material biodegrades at a high rate with little bioconcentration.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements. This material is listed as U112 (ignitable waste).

14. TRANSPORT INFORMATION

US DOT

Proper Shipping Name: Ethyl Acetate
Hazard Class: 3
UN Number: UN1173
Packing Group: II

IMDG

Proper Shipping Name: Ethyl Acetate
Hazard Class: 3
UN Number: UN1173
Packing Group: II

IATA

Proper Shipping Name: Ethyl Acetate
Hazard Class: 3
UN Number: UN1173
Packing Group: II

15. REGULATORY INFORMATION

US Federal Regulations:

CERCLA Hazardous Substances: CAS# 141-78-6 – 5000 lb final RQ; 2270 kg final RQ

SARA Section 302: Does not have a TPQ

SARA Codes: CAS# 141-78-6 – fire

Section 313: Ethyl Acetate (CAS# 141-78-6) is not subject to SARA Title III Section 313 and 40 CFR 373 reporting requirements.

OSHA: Not considered highly hazardous by OSHA.

US State Regulations:

CAS# 141-78-6 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts
California Prop 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Originally Prepared: 10/24/2006

Last Revised: 9/29/14 – Removed acute toxicity, inhalation category in Section 2 based on available toxicity data.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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