



ETHYL ACETATE

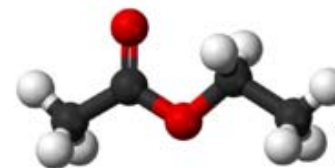
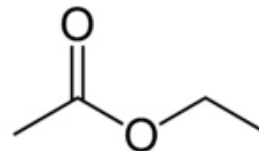
Chemical Formula: $C_4H_8O_2$

CAS Registry Number: 141-76-6

Molecular Weight: 88.105

Category: Ester

PRODUCT INFORMATION



Synonyms:

- Acetate d'ethyle
- ACETATE, ETHYL
- acetato de etilo
- Acetic acid ethyl ester
- Acetic acid, ester with EtOH
- Acetic acid, ethyl ester
- Acetic ether
- Acetidin
- Acetoxyethane
- ESSIGSAEURE-AETHYLESTER
- ethyl acetate
- ETHYL ETHANOATE
- Ethylacetat
- EtOAc
- NSC 70930
- UN 1173
- UN 1173
- Vinegar naphtha

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Physical and Chemical Properties

Appearance: Clear liquid.

Odor: Fruity odor.

Solubility: 1 ml/10ml water @ 25°C

Specific Gravity: 0.902 @ 20°C/4°C

pH: No information found.

% Volatiles by volume @ 21°C (70°F): 100

Boiling Point: 77°C (171°F)

Melting Point: -83°C (-117°F)

Vapor Density (Air=1): 3.0

Vapor Pressure (mm Hg): 76 @ 20°C (68°F)

Evaporation Rate (BuAc=1): 6

Application

Ethyl acetate is primarily used as a solvent and diluent, being favored because of its low cost, low toxicity, and agreeable odor. For example, it is commonly used to clean circuit boards and in some nail varnish removers (acetone and acetonitrile are also used). Coffee beans and tea leaves are decaffeinated with this solvent. It is also used in paints as an activator or hardener. Ethyl acetate is present in confectionery, perfumes, and fruits. In perfumes, it evaporates quickly, leaving but the scent of the perfume on the skin.

Ethyl acetate is used as a solvent in oil-based lacquers and enamels (especially in polyurethane finishes) and in inks and adhesives. It is also used as a solvent in many chemical processes.

Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Heat will contribute to instability. Slowly decomposed by moisture.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Avoid heat, flame and other sources of ignition. Contact with nitrates, strong oxidizers, strong alkalis, or strong acids may cause fire and explosions. Will attack some forms of plastic, rubber, and coatings.

Conditions to Avoid:

No information found.



Hazards Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Health Rating: 2 - Moderate (Life)

Flammability Rating: 4

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Inhalation can cause severe irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. High concentrations may cause lung damage. An irritant to the nose, throat, and upper respiratory tract. Exposure to high concentrations have a narcotic effect and may cause liver and kidney damage.

Ingestion:

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain. Repeated or prolonged contact with the skin has a defatting effect and may cause dryness, cracking, and possibly dermatitis.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Chronic overexposure may cause anemia with leukocytosis (transient increase in the white blood cell count) and damage to the liver and kidneys.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. 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.



Fire Fighting Measures

Fire:

Flash point: -4°C (25°F) CC

Autoignition temperature: 426°C (799°F)

Flammable limits in air % by volume:

l_{el}: 2.0; u_{el}: 11.5

Flammable Liquid and Vapor! Contact with strong oxidizers may cause fire.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Sealed containers may rupture when heated. Sensitive to static discharge.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water may be used to flush spills away from exposures and to dilute spills to non-flammable mixtures. Vapors can flow along surfaces to distant ignition source and flash back.

Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer.

Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL): 400 ppm (TWA)

-ACGIH Threshold Limit Value (TLV): 400 ppm (TWA), A4 - Not classifiable as a human carcinogen.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH



document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Ecological Information

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life of less than 1 day. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Environmental Toxicity:

For Ethyl Acetate:

96 Hr LC50 Pimephales promelas: 230 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 484 mg/L [flow-through];

48 Hr EC50 Daphnia magna (water flea): 717 mg/L;

48 Hr EC50 Scenedesmus subspicatus (algae): 3300 mg/L:

Ethyl Acetate Microtox Data:

5 min EC50 Photobacterium phosphoreum: 1180 mg/L;

15 min EC50 Photobacterium phosphoreum: 5870 mg/L;

2 Hr EC50 Pseudomonas fluorescens: 7400 mg/L;

15 min EC50 Pseudomonas fluorescens: 1500 mg/L

Other Information

NFPA Ratings: Health: 1 Flammability: 4 Reactivity: 0

Label Hazard Warning:

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED OR INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Keep away from heat, sparks and flame.

Avoid breathing vapor.

Keep container closed.

Use only with adequate ventilation.

Avoid contact with eyes, skin and clothing.

Wash thoroughly after handling.

**Label First Aid:**

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. In all cases, get medical attention.
