

Ethyl Acetoacetate (EAA) MSDS

1. Product Name and Identification

Product Name: [Ethyl Acetoacetate \(EAA\)](#)

Synonyms: Ethyl Acetylacetate, Acetoacetic Acid Ethyl Ester

CAS Number: 141-97-9

Recommended Uses: Chemical intermediate, Solvent, Pharmaceutical synthesis

Manufacturer/Distributor Details:

- **Name:** [Insert Manufacturer/Distributor Name]
 - **Address:** [Insert Address]
 - **Emergency Contact Number:** [Insert Contact Number]
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2. Composition/Ingredients

Substance/Preparation: Substance

Chemical Name: Ethyl Acetoacetate

CAS Number: 141-97-9

Percent Composition: $\geq 99\%$

3. Hazards Identification

Classification of the Substance or Mixture:

- **Flammable Liquids:** Category 3
- **Acute Toxicity (Oral):** Category 5
- **Eye Irritation:** Category 2A
- **Skin Irritation:** Category 2

Hazard Statements:

- Flammable liquid and vapor.
- May be harmful if swallowed.
- Causes skin irritation.
- Causes serious eye irritation.

Precautionary Statements:

- Keep away from heat, sparks, open flames, and hot surfaces. No smoking.

- Wear protective gloves, protective clothing, and eye protection.
- Wash skin thoroughly after handling.
- If on skin or in eyes, follow first aid instructions listed below.

Pictograms:

- [Insert placeholder for flame and exclamation mark symbols]

Additional Notes: Avoid inhalation of vapors or mist, as it may cause irritation to the respiratory tract.

4. First Aid Measures

General Information: Provide support based on symptoms. Remove individual from exposure source if safe to do so.

Eyes: Rinse thoroughly with water for at least 15 minutes. Remove contact lenses if applicable and continue rinsing. Seek medical attention if irritation persists.

Skin: Wash the affected area with soap and water. Remove contaminated clothing and wash before reuse. Get medical assistance if redness or irritation continues.

Inhalation: Move to fresh air. If breathing difficulties occur, seek medical attention immediately. Administer oxygen if trained to do so.

Ingestion: Rinse mouth with water. Do NOT induce vomiting. Drink water to dilute. Obtain medical attention if symptoms occur or large amounts are ingested.

Important Notes for Physicians: Treat symptomatically. No specific antidote is available.

5. Handling and Storage

Handling:

- Avoid breathing vapors or mist, and minimize contact with skin and eyes.
- Handle in a well-ventilated area away from ignition sources. Use explosion-proof equipment.
- Static discharge precautions should be in place as vapors may accumulate.

Storage:

- Store in a cool, dry, and well-ventilated area away from heat sources, sparks, and open flames.
 - Keep container tightly closed when not in use.
 - Store away from oxidizers and acids.
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6. Exposure Controls/Personal Protection

Engineering Controls:

- Use local exhaust ventilation systems to reduce vapor concentration.
- Ensure workspaces are adequately ventilated.

Personal Protection Equipment (PPE):

- **Eye Protection:** Safety goggles or face shields in areas of potential splash.
- **Skin Protection:** Chemical-resistant gloves such as nitrile or neoprene.
- **Respiratory Protection:** Wear an appropriate respirator if ventilation is insufficient or for extended exposure.
- **Other:** Wear protective clothing to prevent skin contact.

Hygiene Measures:

- Wash hands and face after handling.
- Avoid eating, drinking, or smoking in areas where this product is being used.

Recommended Workplace Exposure Standards:

- No specific occupational exposure limits set. Minimize exposure as a precaution.
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7. Physical and Chemical Properties

- **Appearance:** Clear, colorless liquid
- **Odor:** Fruity, pleasant odor
- **Odor Threshold:** Not available
- **pH:** Not applicable
- **Melting Point:** -45°C
- **Boiling Point:** Approx. 180°C
- **Flash Point:** 72°C (closed cup)
- **Auto-Ignition Temperature:** Approx. 395°C
- **Flammability:** Flammable liquid and vapor
- **Explosive Limits:** 1.4% (lower) to 8.0% (upper) by volume in air

- **Vapor Pressure:** Approx. 1.1 mmHg at 20°C
 - **Density:** Approx. 1.03 g/cm³ at 20°C
 - **Solubility:** Slightly soluble in water, miscible with most organic solvents
 - **Molecular Formula:** C₆H₁₀O₃
 - **Viscosity:** Low viscosity liquid
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8. Stability and Reactivity

Chemical Stability: Stable under recommended storage conditions.

Conditions to Avoid: Heat, flames, sparks, and static discharge. Avoid prolonged storage in direct sunlight.

Materials to Avoid: Strong oxidizing agents, strong acids, reducing agents.

Hazardous Decomposition Products: Thermal decomposition or combustion may release carbon monoxide, carbon dioxide, and other toxic fumes.

Polymerization: Will not occur under normal use and storage conditions.

9. Toxicological Information

Acute Toxicity:

- Oral LD₅₀ (Rat): Approx. 2000 mg/kg

Skin Corrosion/Irritation: May cause mild to moderate skin irritation.

Eye Damage/Irritation: Causes irritation upon contact, including redness and tearing.

Respiratory Effects: Vapors may irritate respiratory tract with symptoms such as coughing and discomfort.

Chronic Effects: Prolonged skin contact can cause dryness or cracking. Prolonged inhalation of vapors should be avoided.

Carcinogenicity: Not classified as carcinogenic by IARC, NTP, or OSHA.

Other Information: Minimizing exposure through protective measures is recommended to prevent irritation.

10. Disposal Considerations

Waste Disposal Methods:

- Dispose of unused product in accordance with local, state, and federal environmental regulations.
- Avoid discharge into the environment or waterways.

Packaging Disposal:

- Empty containers should be recycled or disposed of after thorough cleaning. Do not re-use containers for other materials.

Environmental Precautions: Prevent contamination of soil, waterways, and drains.
