1. CHEMICAL IDENTITY

**Chemical Name:** Acetic anhydride  
**Synonyms:** Acetic oxide, Acetyl ether, Ethanoic anhydride, Acetic acid anhydride

**Formula:** C₄H₆O₃  
**CAS No:** 108-24-7  
**UN No:** 1715

**Regulated Identification**
- **Shipping Name:** Acetic anhydride  
- **Hazchem Code:** 2P

**HAZARDOUS INGREDIENTS**
1. Acetic anhydride  
2. Acetic anhydride

2. PHYSICAL / CHEMICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Boiling Pt. °C:</strong></td>
<td>139.9</td>
</tr>
<tr>
<td><strong>Melting Pt. °C:</strong></td>
<td>-73</td>
</tr>
<tr>
<td><strong>Vapour Density (Air =1):</strong></td>
<td>3.52</td>
</tr>
<tr>
<td><strong>Vapour Pressure @ 35°C mmHg:</strong></td>
<td>10mm Hg at 36 °C</td>
</tr>
<tr>
<td><strong>Solubility in water at 30°C g/100ml:</strong></td>
<td>Slowly soluble</td>
</tr>
<tr>
<td><strong>ODour:</strong></td>
<td>Strong acetic odour.</td>
</tr>
<tr>
<td><strong>odds:</strong></td>
<td>Miscible with alcohol, ether. Decomposes in hot alcohol</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td></td>
</tr>
</tbody>
</table>

3. FIRE / EXPLOSION HAZARD DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flammability:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>TDG Flammability:</strong></td>
<td>UEL: 10.3</td>
</tr>
<tr>
<td><strong>Autoignition Temperature °C:</strong></td>
<td>316</td>
</tr>
<tr>
<td><strong>Explosion sensitivity to impact:</strong></td>
<td>Stable</td>
</tr>
<tr>
<td><strong>Explosion sensitivity to static Electricity:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous Combustion Products:</strong></td>
<td>Emits irritating vapour when heated. Toxic gases and vapors such as acetic acid and carbon monoxide may be released in fire involving acetic anhydride.</td>
</tr>
<tr>
<td><strong>Hazardous Polymerization:</strong></td>
<td>Does not occur.</td>
</tr>
</tbody>
</table>

4. REACTIVITY DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Combustible Liquid:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Flammable Material:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Pyrophoric Material:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Explosive Material:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Oxidiser:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Organic Peroxide:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Corrosive Material:</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Incompatibility with other material:</strong></td>
<td>With 2-amino ethanol, aniline, chlorosulfonic acid, (Cro3+acetic acid), ethylenediamine, ethyleneimine, glycerol, oleum, HF, permanganates, NaOH</td>
</tr>
</tbody>
</table>

Chemical Stability: Stable
Can react vigorously with oxidising materials, will react violently on contact with water or steam.

Reactivity: 

Hazardous Reaction Products

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, ingestion, skin and eyes.

Effects of Exposure / Symptoms:
Inhalation: Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Vapors may cause dizziness or suffocation. Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. Prolonged skin contact may be painless with reddening of the skin followed be a white appearance of the skin. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color. Eyes: Contact with liquid is corrosive to the eyes and causes severe burns. May cause chemical conjunctivitis and corneal damage. Ingestion: May cause severe and permanent damage to the digestive tract. May cause perforation of the digestive tract. Ingestion of large amounts may cause CNS depression. May cause systemic effects.

Emergency Treatment:
Inhalation: Remove the victim at once to fresh air area, if breathing becomes difficult give oxygen.
Skin: Remove the wetted clothes, flush the affected area with plenty of water.
Eyes: Irrigate with plenty of water for 15 mins.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2–4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

LD50 (oral-rat) mg/kg: 1780 mg/kg
LC50 (rat) mg/kg: 1680 mg/m³ 6 hr
Permissible Exposure Limit:
5 ppm (20 mg/m³)

Odour Threshold: 0.56 mg/m³
STEL: 5 ppm (21 mg/m³)

Health Flammability Reactivity Special
NFPA Hazard
Signals 3 2 1

6. PREVENTIVE MEASURES

Personal Protective Equipment: Provide overclothing rubber shoes, face shield, respiratory protection is necessary for all exposure.
Handling: Store in a dry, cool, well ventilated area, away from heat, flame and oxidising agents.
Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water.

Precautions: Avoid contact with liquid and vapours.

7. EMERGENCY / FIRST AID MEASURES

FIRE:
Fire Extinguishing Media: CO₂, dry chemical powder, alcohol foam. Do not use water.

Special Procedure: Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

Unusual Hazards: Vapour is invisible and heavier than air.
EXPOSURE: First Aid Measures:
Inhalation: Remove the victim at once to fresh air area, if breathing becomes difficult give oxygen.
Skin: Remove the wetted clothes, flush the affected area with plenty of water.
Eyes: Irrigate with plenty of water for 15 mins.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Antidotes / Dosages:

SPILLS :
Steps To Be Taken : Shut off leaks if without risk. Contain the spillage on sand or earth.
Waste Disposal Method: Neutralise with sodium bicarbonate solution. See "Additional Information"

8. ADDITIONAL INFORMATION / REFERENCES
Moderate fire and explosion hazard when exposed to heat and flame. Reaction with Ammonium nitrate+Hexamethylene tetraminium acetate+Nitric acid forms the products of explosive RDX and HMX. Potentially explosive reaction with Barium peroxide, Boric acid, Chromium trioxide. Spillage treatment: Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, using the appropriate protective equipment. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. Do not expose spill to water. Spill may be neutralized with lime. Cover with material such as dry soda ash or calcium carbonate and place into a closed container for disposal. A vapor suppressing foam may be used to reduce vapors.

9. MANUFACTURERS / SUPPLIERS DATA
NAME OF FIRM : Contact person
MAILING ADDRESS : in Emergency :
TELEPHONE / TELEX NOS : Local Bodies involved :
TELEGRAPHIC ADDRESS : Standard Packing :
OTHERS : Trem Card Details / Ref :

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