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1. Chemical Product

**Product Name:** Acetic Anhydride

**Chemical name:** Acetic Anhydride

**Synonyms:** Acetic oxide; Acetyl oxide; Ethanoic Anhydride; Acetic acid anhydride; Acetyl ether; Ethanoic Anhydrate; Acetanhydride;

**Chemical Formula:** C₄H₆O₃

2. Composition and Information on Ingredients

**Composition:** Acetic Anhydride 100% by weight.

**Toxicological Data on Ingredients:** Acetic anhydride: ORAL (LD₅₀): Acute: 1780 mg/kg [Rat]. DERMAL (LD₅₀): Acute: 4000 mg/kg [Rabbit].

3. Hazards Identification

**Potential Acute Health Effects:**
Extremely hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Very hazardous in case of skin contact (corrosive). Hazardous in case of skin contact (permeator). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterised by coughing, choking or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening or occasionally blistering.

**Potential Chronic Health Effects:**
CARCINOGENIC EFFECTS: Not available.
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.
4. First Aid Measures

Eye Contact: 
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin Contact: 
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact: 
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: 
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation: 
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: 
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

5. Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 316°C (600.8°F)

Flash points: CLOSED CUP: 49°C (120.2°F). OPEN CUP: 51°C (123.8°F).

Flammable limits: LOWER: 2.7% UPPER: 10.3%
**Products of Combustion:** These products are carbon oxides (CO, CO₂).

**Fire Hazards in Presence of Various Substances:** Flammable in presence of heat

**Explosion Hazards in Presence of Various Substances:**
- Risks of explosion of the product in presence of mechanical impact: Not applicable
- Risks of explosion of the product in presence of static discharge: Not applicable

**Fire fighting media and Instructions:** Flammable liquid.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

**Special Remarks on Fire Hazards:** Not applicable.

**Special Remarks on Explosion Hazards:** Not applicable.

### 6. Accidental Release Measures

**NB:** Wear appropriate protective equipment/clothing including gloves before removing any spills.

**Small spill:** Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Large spill:** Flammable liquid. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapour drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

### 7. Handling and Storage

**Precautions:** Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapour/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage: Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
   TWA: 5
   TWA: 20

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Wear face shield, gloves, boots, full suit and vapour respirator. Be sure to use an approved/certified respirator or equivalent.

Personal Protection in Case of a Large Spill: Wear splash goggles, full suit, vapour respirator, boots and gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

9. Physical and Chemical Properties

Physical state and appearance: Liquid
Odor: Strong
Taste: Strong
Molecular Weight: 102.09 g/mole
Color: Light
pH (1% soln/water): Not available
Boiling Point: 139.9°C (283.8°F)
Melting Point: -73.1 (-99.6°F)
Critical Temperature: Not available
Specific Gravity: 1.08 (Water = 1)
Vapor Pressure: 0.5 kPa (@ 20°C)
Vapor Density: 3.52 (Air = 1)
Vatility: Not available.
Odor Threshold: 0.1 ppm
Water/Oil Dist. Coeff.: Not available
Ionicity (in Water): Not available
Dispersion Properties: Not available
Solubility: Not available

10. Stability and Reactivity Data

Stability: The product is stable.
Corrosivity: Not available
Instability temperature: Not applicable
Conditions of Instability: Not available
Incompatibles: Not available
Polymerization: Will not occur

11. Toxicological Information

Routes of Entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to animals: WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 1780 mg/kg [Rat]. Acute dermal toxicity (LD50): 4000 mg/kg [Rabbit]. Acute toxicity of the vapour (LC50): 1000 4 hours [Rat].

Effects on humans:

CHRONIC POTENTIAL HEALTH EFFECTS: Causes damage to the following organs: lungs and mucous membranes

Other information: Extremely hazardous in case of skin contact (irritant), of ingestion. Very hazardous in case of skin contact (corrosive). Hazardous in case of skin contact (permeator), of eye contact (corrosive), of inhalation (lung corrosive).
12. Ecological Information

Ecotoxicity: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the product itself.

13. Disposal Considerations

Waste Disposal: Observe all local regulations regarding disposal. Avoid unauthorised disposal.

14. Other Information

Not applicable
15. References


16. Appendices

Not applicable

17. Revision History

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