MATERIAL SAFETY DATA SHEET

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ACETIC ACID, GLACIAL

SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: ACETIC ACID, GLACIAL
OTHER DESIGNATIONS: Ethanoic Acid, Anhydrous Acetic Acid, Methane Carboxylic Acid, CH₃COOH, GE Material D5C26, CAS #000 064 197
MANUFACTURER: Available from many suppliers.

SECTION II. INGREDIENTS AND HAZARDS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>%</th>
<th>HAZARD DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid (CH₃COOH)</td>
<td>99.5% minimum</td>
<td>8-hr TWA 25 mg/m³ or 10 ppm*</td>
</tr>
</tbody>
</table>

*Current OSHA standard and ACGIH (1980) TLV.

SECTION III. PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling pt, 1 atm, deg F (C)</td>
<td>244 (118)</td>
</tr>
<tr>
<td>Vapor pressure at 25 C, mm Hg</td>
<td>14.8</td>
</tr>
<tr>
<td>Vapor density (Air=1)</td>
<td>2.07</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Soluble</td>
</tr>
</tbody>
</table>

Appearance & Odor: Clear, colorless, mobile liquid with a characteristic, sharp and pungent, vinegar-like odor which is perceptible (unfatigued) above 1 ppm.

SECTION IV. FIRE AND EXPLOSION DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point and Method</td>
<td>112 F (44.5 C) (TOC)</td>
</tr>
<tr>
<td>Autoignition Temp.</td>
<td>800 F (427 C)</td>
</tr>
<tr>
<td>Flammability Limits In Air</td>
<td>4 by volume</td>
</tr>
<tr>
<td>LOWER</td>
<td>16</td>
</tr>
<tr>
<td>UPPER</td>
<td>19.9 @ 200</td>
</tr>
</tbody>
</table>

Extinguishing Media: Use water spray, dry chemical, alcohol foam, or CO₂. Water spray can be used to flush spills away from exposures and to dilute spills to nonflammable mixtures. Use water to keep fire-exposed containers cool. Glacial acetic acid is a combustible liquid.

Water diluted acid can react with metals to produce hydrogen gas.

Firefighters to wear self-contained breathing apparatus to protect against suffocating and corrosive vapors when this material is involved in a fire situation.

SECTION V. REACTIVITY DATA

This material is a stable chemical when stored and handled properly.
It may react violently with such chemicals as ammonium nitrate, phosphorous trichloride, potassium hydroxide and other alkali materials, and strong oxidizing agents.
Reacts readily with most common metals (except aluminum), basic salts, amines, etc., to form water-soluble salts. Reacts with alcohol to form esters.
Nitric acid or chronic acid can explode with acetic acid if not kept cold.
Mixing chlorosulfonic acid, 2-aminoethanol, oleum, or ethylene diamine with acetic acid in a closed container can cause the temperature and pressure to increase.
Contracts slightly on freezing.
SECTION VI. HEALTH HAZARD INFORMATION

Irritation of vapor concentrations over 50 ppm intolerable, resulting in irritation of eyes, nose, throat, and lungs. Repeated exposure to high concentrations may produce permanent injury. Neither odor nor degree of irritation are adequate to indicate vapor concentrations. Skin contact can produce deep burns, with skin destruction. If inhaled, high vapor concentrations may blacken the skin, produce skin sensitization, conjunctivitis, and erosion of exposed teeth. Eye contact with acid mist will cause immediate burns and possible permanent damage. Ingestion is improbable as the odor would be extremely irritating; but severe intestinal irritation would result with burns to the mouth and the upper respiratory tract.

STEEP:
- Eyewash: Irrigate with water immediately for at least 15 minutes, including under eyelids.
- Skin Contact: Wash immediately with copious water.
- Inhalation: Remove victim to fresh air; rinse mouth and nasal passages. Administer artificial respiration or oxygen if needed.
- Ingestion: Rinse mouth. Give 3 glasses milk or water. Do not intubate stomach or stimulate vomiting.
- Prompt medical help for further treatment, observation and support.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Carry out safety personnel. Provide adequate ventilation. Personnel cleaning up large spills should wear self-contained breathing apparatus and equipment to prevent contact with the liquid. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Liquid surfaces of small spills or residue should be covered with sodium bicarbonate and flushed with a large excess of water to the sewer. Containers and pick up large spills, if possible, for waste disposal.

SPILLAGE: Dispose of waste material by incineration; or dispose of neutralized waste in a landfill. Follow Federal, State, and Local regulations.

SECTION VIII. SPECIAL PROTECTION INFORMATION

Carry out adequate exhaust ventilation to meet TLV requirements. Exhaust hoods should have air velocity of 100 lfm minimum. Wear rubber gloves, aprons, etc. to prevent skin contact. Splash proof goggles or face shields should be worn to prevent any eye contact.

Carry out gas tight goggles may also be required to prevent vapor irritation of the eyes.

Carry out eyewash stations and showers must be readily available where this material is handled.

Carry out respirators should be available for normal or emergency use. Where fumes are below 500 ppm, a chemical cartridge organic vapor respirator with full facepiece or a self-contained breathing apparatus with full facepiece is warranted; fumes up to 1000 ppm require a Type C air-supplied respirator with full facepiece operated in pressure-demand mode.

Carry out reclusion from exposure individuals with disease of eyes, skin and respiratory tract.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Carry out use with adequate ventilation. Exhaust ducts for ventilation should be acid resistant.

Carry out detached storage preferred. Store in sealed containers away from oxidizing agents and combustible materials. Glass, polyethylene, Type 316 stainless steel containers are suitable.

Carry out prevent skin and eye contact as this acid is highly corrosive to body tissues.

Carry out olfactory detection at 1 ppm is well below the TLV; however, documentation shows workers can tolerate up to 200 ppm, probably due to olfactory fatigue. Suspected areas of high acetic acid concentrations or variable concentrations should be tested before employee exposure.

DOT Classification - CORROSIVE MATERIAL, LABEL: "CORROSIVE."

APPROVALS:
- CRD: A. L. M. N. C. H. E.
- Industrial Hygiene: 12-3-80
- Medical Review: 16 Dec. 1980

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