MATERIAL SAFETY DATA SHEET

I - PRODUCT IDENTIFICATION

COMPANY NAME: Calgon Vestal Laboratories
ADDRESS: 5035 Manchester Avenue
          St. Louis, MO 63110
Tel No: (314)535-1810
Nights: (314)862-2000
CHEMTREC: (800)424-9300

PRODUCT NAME: Nickel-Safe Ice Machine Cleaner
Product No.: 4287

Synonyms: Acid Cleaner

II - HAZARDOUS INGREDIENTS OF MIXTURES

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>(CAS#)</th>
<th>(ORAL LD50)</th>
<th>% By Wt.</th>
<th>TLV</th>
<th>PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric Acid* (7664-38-2)</td>
<td>(1.5g/kg)</td>
<td>&lt;30</td>
<td>1mg/m³</td>
<td>1mg/m³</td>
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<tr>
<td>Hydroxyacetic Acid(79-14-1)</td>
<td>(1,950mg/kg)</td>
<td>&lt;10</td>
<td>N/ÅV</td>
<td>N/ÅV</td>
<td></td>
</tr>
<tr>
<td>*ACGIH Short Term Exposure Limit; 3mg/m³</td>
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</tbody>
</table>

III - PHYSICAL DATA

Vapor Pressure, mm Hg: Undetermined
Evaporation Rate(ether=1): N/A
Solubility in H₂O: Complete
Freezing Point F: N/A
Boiling Point F: Undetermined
Specific Gravity H₂O=1 @25°C: 1.85

Vapor Density (Air=1)60-90F: Undetermined
% Volatile by wt: <5
pH @ 1%: Solution 1.8-2.2
pH as Distributed: N/A
Appearance: Amber Liquid
Odor: Chemical Odor

IV - FIRE AND EXPLOSION

Flash Point F: N/A
Flammable Limits: N/A

Extinguishing Media: Product is not flammable or combustible, use media appropriate for the primary source of fire.

Special Fire Fighting Procedures: Exercise caution when fighting any fire involving chemicals. Respiratory protection is essential.

Unusual Fire and Explosion Hazards: Contact with some metals can generate hydrogen gas.

V - REACTIVITY DATA

Stability - Conditions to avoid: None Known.

Incompatibility: Strong alkalis and oxidizers such as chlorine. Avoid prolonged contact by concentrated product with metals.

Hazardous Decomposition Products: Phosphoric acid and phosphorous oxide fumes. On extended contact with some metals, concentrated product could evolve hydrogen gas.

Conditions Contributing to Hazardous Polymerization: Product will not polymerize.

(Cont'd on Page 2)
EFFECTS OF OVEREXPOSURE (Medical Conditions Aggravated/Target Organ Effects, A. ACUTE (Primary Route of Exposure) EYES: Product is extremely irritating/corrosive to eyes and may result in burns. SKIN: (Primary Route of Exposure) Product is severely irritating/corrosive to skin and contact can result in skin burns. Repeated or prolonged contact with more dilute solution can result in irritation and/or dermatitis. INHALATION: Inhalation of aerosol mist or vapor is irritating to eyes, lungs, throat and nasal passages. INGESTION: May result in abdominal hemorrhage, severe pain, vomiting and loss of consciousness. Necrosis of stomach and gastrointestinal tract may also occur. B. SUBCHRONIC, CHRONIC, OTHER: No available information was found.

VII - EMERGENCY AND FIRST AID PROCEDURES

EYES: In case of contact, immediately flush eyes thoroughly with plenty of water for at least 15 minutes. Seek medical aid. SKIN: In case of contact, immediately wash with soap and plenty of water for at least 15 minutes after removing contaminated clothing. Seek medical aid. INHALATION: If inhaled, remove to fresh air if not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid. INGESTION: If swallowed, DO NOT induce vomiting. Give water and seek medical aid immediately. Never give anything by mouth to an unconscious person.

VIII - SPILL OR LEAK PROCEDURES

Spill Management: Contain spill. Cover with sodium bicarbonate mixture (50/50). Mix and add water to form slurry. Place in D.O.T.-approved container for disposal. Wash residue to sanitary sewer with large quantities of water.

Waste Disposal Methods: Dispose of in accordance with all federal, state and local regulations.

IX - PROTECTION INFORMATION/CONTROL MEASURES

Respiratory: Where engineering controls are impractical, use NIOSH-approved respirator appropriate for conditions. Eye: Chemical | Goggles: Chemical | Glove: Rubber | Splash Goggles | Face Shield

Other Clothing and Equipment: Rubber apron and rubber boots.

Ventilation: Use with good general room ventilation or dilution ventilation to maintain air concentrations below established limits.

X - SPECIAL PRECAUTIONS

Precautions to be taken in Handling and Storing: Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Wear goggles or face shield, rubber gloves and protective clothing when handling. Additional Information: Keep container closed. Read and observe all label precautions.

Prepared by: R.C. Jente
Revision Date: 07/29/87

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