Material Safety Data Sheet
Manitowoc Ice Machine Cleaner

Manitowoc
2110 S 26th St., Manitowoc, WI 54220
Emergency Phone Number: (800) 545-5720

DATE PREPARED: 04/10/2013
REVISION DATE: 04/10/2013
CHEM-TEL: 800-225-3924
PRODUCT NUMBER: 100735

SECTION I - IDENTIFICATION

PRODUCT NAME: Manitowoc Ice Machine Cleaner
PRODUCT CODE: 100735
PRODUCT USE: Cleaner

SECTION II – COMPOSITION/HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENT</th>
<th>CAS NUMBER</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric Acid</td>
<td>7664-38-2</td>
<td>1 mg/m3</td>
<td>1 mg/m3</td>
</tr>
<tr>
<td>Hydroxyacetic Acid (Glycolic Acid)</td>
<td>79-14-1</td>
<td>3 mg/m3</td>
<td>3 mg/m3</td>
</tr>
</tbody>
</table>

SECTION III – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Corrosive to all body tissues. Causes destruction of eye and skin tissue. Harmful if inhaled or swallowed.

ROUTES OF ENTRY: Eyes, Ingestion, Inhalation, Skin

EYES: Causes immediate irritation and burning followed by destruction of eye tissue.

INGESTION: Corrosive to gastrointestinal tract. May cause gastrointestinal irritation, nausea, vomiting, loss of consciousness.

INHALATION: Corrosive to respiratory passages. May cause coughing, wheezing, laryngitis, shortness of breath, headache, or nausea.

SKIN: Immediate inflammation and burning followed by destruction of skin tissue. Moderately toxic when absorbed through skin.

MEDICAL CONDITION AGGRAVATED: Aggravates pre-existing skin conditions.

CHRONIC HEALTH HAZARDS: Kidney and liver damage possible.

CARCINOGENICITY:
OSHA: No ACGIH: No NTP: No IARC: No OTHER: N/A

SECTION IV - FIRST AID MEASURES

EYES: Immediately flush with water for 15 minutes while holding eyelids open. Seek medical attention if irritation persists.

INGESTION: Do not induce vomiting. Rinse mouth out with water. Seek immediate medical attention. If needed, immediately begin artificial respiration.

INHALATION: Move to fresh air. Give oxygen if breathing is labored. Contact a physician immediately.

SKIN: Immediately wash with soap and water for 15 minutes. Seek immediate medical attention.

NOTE TO PHYSICIAN:

SECTION V – FIRE-FIGHTING MEASURES

FLASH POINT: Not Tested

FLAMMABLE LIMITS IN AIR, (% BY VOLUME) UPPER: N/A LOWER: N/A

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, and foam.

SPECIAL FIRE FIGHTING PROCEDURES: Wear SCBA in fire situations.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon and phosphorus.

SECTION VI – ACCIDENTAL RELEASE MEASURES

SPILL: Contain the spill with the use of dikes. Neutralize the spill in place with an alkaline material. Absorb spill with non-combustible material such as vermiculite, sand or earth.
WASTE DISPOSAL: Dispose of in accordance with local, state and federal regulations. Offer drums for recycling. Pails and smaller containers should be rinsed, resealed, and disposed of properly.

RCRA STATUS: Waste likely considered Hazardous Waste D002 (Corrosive waste) due to the pH of the solution and the corrosive characteristic.

SECTION VII – HANDLING AND STORAGE

HANDLING AND STORAGE: Always add acid to water, not water to acid. Avoid contact with skin, eyes and clothing. Wear appropriate protective equipment. Wash thoroughly after handling. As with all chemicals, use good industrial hygiene practices. Store in cool, dry, ventilated area.

OTHER PRECAUTIONS: Store away from caustic / alkaline materials.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS / VENTILATION: Local ventilation/exhaust recommended.

RESPIRATORY PROTECTION: Wear NIOSH approved respirator.

PROTECTIVE CLOTHING: Chemical resistant rubber, acid resistant gloves. Goggles or full face shield Acid resistant boots and apron.

ADDITIONAL MEASURES: Wash hands thoroughly with soap and water after use.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless Liquid
ODOR: Odorless
PHYSICAL STATE: Liquid
BOILING POINT: 130°C
FREEZING POINT: Not Tested
VAPOR PRESSURE (mm Hg): Same as water.
VAPOR DENSITY (AIR=1): 1
EVAPORATION RATE: >1
SPECIFIC GRAVITY (H2O=1): 1.2

pH: 1-2
SOLIDS (%): Not tested
SOLUBILITY IN WATER: Miscible
VOLATILITY INCLUDING WATER (%): >80%
VOLATILE ORGANIC COMPOUNDS (VOC): 0%

SECTION X – STABILITY AND REACTIVITY DATA

CHEMICAL STABILITY: Stable
CONDITIONS TO AVOID: None known
HAZARDOUS DECOMPOSITION OR BY-PRODUCT: Oxides of carbon and phosphorus.
HAZARDOUS POLYMERIZATION: Will not occur

SECTION XI – TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Phosphoric Acid - 7664-38-2 - LD 50 Oral Rat: 1,530 mg/kg; LD 50 Dermal Rabbit: 2,740 mg/kg.

Hydroacetic acid (Glycolic acid) - LD50 - oral, rat: 1950 mg/kg | eye, rabbit: 2 mg (SEV)

ECOLOGICAL INFORMATION: Dangerous to aquatic life in high concentrations. Phosphoric acid: 138 ppm / 24 hr. / mosquito fish / TLm / fresh water
SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Dispose of in accordance with local, state and federal regulations. Offer drums for recycling. Pails and smaller containers should be rinsed, resealed, and disposed of properly.

RCRA STATUS: Waste likely considered Hazardous Waste D002 (Corrosive waste) due to the pH of the solution and the corrosive characteristic.

SECTION XIV - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Consumer commodity
ORM-D
HAZARD CLASS/DIVISION: N/A
UN/NA NUMBER: N/A
PACKAGING GROUP: None

AIR SHIPMENT
PROPER SHIPPING NAME: Corrosive Liquid, Acidic, N.O.S., (Containing Phosphoric acid & Hydroacetic acid)
HAZARD CLASS/DIVISION: 8
UN/NA NUMBER: UN 1760
PACKAGING GROUP: III

SHIPPING BY WATER:
VESSEL (IMO/IMDG)
PROPER SHIPPING NAME: Corrosive Liquid, Acidic, N.O.S., (Containing Phosphoric & Hydroacetic acid)
HAZARD CLASS/DIVISION: 8
UN/NA NUMBER: UN 1760
PACKAGING GROUP: III

SECTION XV - REGULATORY INFORMATION

TSCA STATUS: All Chemicals are listed or exempt.
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): The reportable quantity is 5000 pounds (phosphoric acid).
SARA 311/312 HAZARD CATEGORIES: None
SARA 313 REPORTABLE INGREDIENTS: None
CLEAN WATER ACT: None
STATE REGULATIONS: None
INTERNATIONAL REGULATIONS: None
NFPA HEALTH: 2 HMIS HEALTH: 2
NFPA FLAMMABILITY: 0 HMIS FLAMMABILITY: 0
NFPA REACTIVITY: 0 HMIS REACTIVITY: 0
NFPA OTHER: N/A HMIS PROTECTION: X, See your supervisor

SECTION XVI - ADDITIONAL INFORMATION

PREPARATION BY: Tad Hebdon
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