

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

MSDS ID: MI0895

Revised: 04-26-2006

Replaces: 01-15-2003

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ICE MACHINE CLEANER M.I.I.
MSDS ID: MI0895
Synonyms: O-99725
CAS Number: MIXTURE
Chemical Family: Acid Detergent
Formula: Proprietary Information

DISTRIBUTED BY:
Manitowoc Ice, Inc.
2110 South 26th St.
Manitowoc, WI 54220
(920) 682-0161
www.manitowocice.com

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency #: (920) 682-0161
CHEMTREC Emergency #: (800) 424-9300

MANUFACTURED BY: HYDRITE CHEMICAL CO.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! CORROSIVE. Causes severe burns to eyes, skin, and respiratory tract. Harmful or fatal if swallowed. Harmful if inhaled. Reacts with most metals to form explosive/flammable hydrogen gas.

Physical State: Liquid.
Color: Clear. Green.
Odor: No odor.

POTENTIAL HEALTH EFFECTS

Routes Of Exposure: Eyes. Ingestion. Inhalation. Skin.

Target Organs: Eyes. Skin. Respiratory System. Gastrointestinal Tract. Circulatory System. Peripheral Nervous System. Blood.

Eye Contact: CORROSIVE-Causes severe irritation and burns. Small amounts may cause: tissue destruction. permanent eye damage. blindness. redness. tearing.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Contact may not produce an immediate burning sensation, delaying awareness that contact has occurred. Death may result from burns which extend over large portions of the body.

Skin Absorption: No absorption hazard expected under normal use.

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Inhalation: CORROSIVE-Causes severe irritation and burns. Vapors or mists may damage: upper respiratory tract. May cause: tearing. coughing. sneezing. salivation. labored breathing. shortness of breath. fluid in lungs. Excessive exposure may cause: chemical pneumonitis.

Ingestion: CORROSIVE-Causes severe irritation and burns. May cause damage to the: mouth. throat. esophagus. stomach. digestive tract. May cause: nausea. vomiting. diarrhea. abdominal pain. chest pain. shortness of breath. seizures. circulatory shock. unconsciousness. death. increase blood calcium levels. Erosion of teeth is possible. Large amounts may cause:

Medical Conditions Aggravated By Exposure To Product: Skin disorders. Respiratory system disorders. Eye disorders. Kidney disorders. Hypercalcemia. Blood disorders. Dehydration. Hormonal problems.

Other: None known.

Cancer Information: This product does not contain greater than 0.1% of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Potential Environmental Effects: See Section 12.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>OSHA Hazard</u>	<u>% by Wt.</u>
Phosphoric Acid	7664-38-2	YES	< 40 %
Citric Acid	77-92-9	YES	< 10 %

4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Do not apply oils or ointments unless ordered by the physician.

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If fully conscious, drink a quart of water. DO NOT induce vomiting. CALL A PHYSICIAN IMMEDIATELY. If unconscious or in convulsions, take immediately to a hospital or a physician. NEVER induce vomiting or give anything by mouth to an unconscious victim. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to Physicians: The use of gastric lavage is controversial. The advantage of removal of acid must be weighted against the risk of perforation or bleeding. If a large amount of acid (> 1 ml/kg body weight) has been recently ingested, cautious gastric lavage is generally advised if the patient is alert and there is little risk of convulsions. Consultation with a gastroenterologist and/or surgeon is advised. Serious complications such as perforation or stricture of the esophagus may occur requiring care by specialists. Laryngeal edema may develop requiring intubation or tracheostomy.

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5. FIRE FIGHTING MEASURES

Extinguishing Media: For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Alcohol foam.

Fire Fighting Methods: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Product generates heat upon addition of water, with possible spattering. Run-off from fire control may cause pollution.

Fire And Explosion Hazards: This product may react with certain metals to produce flammable Hydrogen Gas.

Hazardous Combustion Products: Phosphorous oxides. Carbon dioxide. Carbon monoxide. Aldehydes. Ketones.

6. ACCIDENTAL RELEASE MEASURES

Spill Clean-Up Procedures: CORROSIVE MATERIAL. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit. Contain spill, place into drums for proper disposal. Carefully neutralize remaining residue with soda ash. Exercise caution during neutralization as considerable heat may be generated. Flush neutralized spill with copious amounts of water. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death.

Storage: CORROSIVE MATERIAL. Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Do not freeze.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

<u>Component</u>	<u>OSHA PEL</u>	<u>OSHA STEL/C</u>	<u>ACGIH TWA</u>	<u>ACGIH STEL/C</u>
Phosphoric Acid	1 mg/m ³	Not Estab.	1 mg/m ³	3 mg/m ³
	1 mg/m ³ +	3 mg/m ³ +		
Citric Acid	Not Estab.	Not Estab.	Not Estab.	Not Estab.

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Note: + Vacated 1989 OSHA PEL(s).

Engineering Controls: Local exhaust ventilation, process enclosures, or other engineering controls are imperative when handling or using this product to avoid overexposure. Avoid creating dust or mist. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Acid-proof. Gauntlet-type. Rubber (latex). Neoprene. Nitrile.

Respiratory Protection: Respiratory protection must be worn when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved respirator. Acid gas cartridge. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Green.

Odor: No odor.

Boiling Point (deg. F): N.D.

Freezing Point (deg. F): N.D.

Melting Point (deg. F): N.D.

Vapor Pressure (mm Hg): N.D.

Vapor Density (air=1): N.D.

Solubility in Water: Complete

pH: < 2 (as is)

Specific Gravity: 1.22-1.24 @25C

% Volatile (wt%): N.D.

Evaporation Rate (nBuAc = 1): N.D.

VOC (wt%): N.D.

VOC (lbs/gal): N.D.

Viscosity: N.D.

Flash Point: N.A.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Autoignition Temperature: No Data

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10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions To Avoid: Contact with water may cause violent reaction with evolution of heat. To dilute: Add product slowly to lukewarm water; not water to product.

Incompatible Materials: Metals. Strong oxidizing agents. Strong reducing agents. Sulfides. Sulfites. Bases. Fluorine. Sulfur trioxide. Phosphorous pentoxide. Sodium tetrahydroborate. Aldehydes. Amines. Amides. Alcohols. Azo-compounds. Carbamates. Esters. Caustics. Phenols. Cresols. Ketones. Organophosphates. Epoxides. Explosives. Combustible materials. Unsaturated halides. Organic peroxides. Mercaptans. Cyanides. Nitromethane. Glycols. Alkalies. Carbonates. Acetates. Potassium Tartrate. Metal Nitrates. Reducing agents. Bicarbonates. Alkali metals. Copper, aluminum, zinc and their alloys. Lead. Oxides of sulfur. Fiber-reinforced Polyester. Steel. Brass. Cast Iron. Reactive Metals.

Hazardous Decomposition Products: Phosphorous oxides. Phosphine. May react with certain metals to produce flammable hydrogen gas. Mixing with strong bases can cause high heat of reaction and generate steam. Reacts with chlorides + stainless steel to form explosive hydrogen gas. Phosphoric acid forms flammable gases with sulfides, mercaptans, cyanides and aldehydes. Carbon dioxide. Carbon monoxide. Aldehydes. Ketones. Heating in air may produce irritating aldehydes, acids, and ketones.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions.

11. TOXICOLOGICAL INFORMATION

LD50 Oral: No Data

LD50 Skin: No Data

LC50 Inhalation: No Data

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available.

Chemical Fate Information: No data available.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D002

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

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14. TRANSPORTATION INFORMATION

DOT (Department of Transportation):

Proper Shipping Name: Corrosive Liquid, N.O.S. (Contains Phosphoric Acid, Citric Acid)

Hazard Class: 8

Identification Number: UN1760

Packing Group: III

Label Required: CORROSIVE

Reportable Quantity (RQ): 5000# (Phosphoric Acid)

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category:

Immediate (Acute) Health Hazard: Y

Delayed (Chronic) Health Hazard: N

Fire Hazard: N

Sudden Release Of Pressure Hazard: N

Reactive Hazard: N

SARA Section 302/304/313/HAP:

Component	CERCLA RQ	SARA RQ	SARA TPQ	SARA 313	U.S. HAP
Phosphoric Acid	5000	N.A.	N.A.	NO	NO
Citric Acid	N.A.	N.A.	N.A.	NO	NO

U.S. STATE REGULATIONS

California - The following components are listed under Proposition 65:

Ethylene Oxide (Trace Amounts)

Propylene Oxide (Trace Amounts)

1,4-dioxane (Trace Amounts)

Wisconsin - The following components are listed as a Wisconsin HAP:

Phosphoric acid.

16. ADDITIONAL INFORMATION

Hydrite Rating System

Health: 3

Flammability: 0

Reactivity: 0

* = Chronic Health Hazard

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NFPA Rating System

Health: 3

Flammability: 0

Reactivity: 0

Special Hazard: None

MSDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

MSDS Prepared by: JAK

Reason for Revision: New format.

The data in this Material Safety Data Sheet relates to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.