

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

MSDS ID: MI0895

Revised: 01-29-2009

Replaces: 04-26-2006

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. Skin. Inhalation. Ingestion.

Target Organs: Eyes. Skin. Respiratory System. Mucous Membranes. No data.

Eye Contact: CORROSIVE-Causes severe irritation and burns. May cause: permanent eye damage. blindness. redness. pain. swelling. tearing. conjunctivitis. impaired vision. burns. ulcerations. corneal damage. irritation.

Skin Contact: CORROSIVE-Causes severe irritation and burns. Contact may cause: permanent skin damage. Contact may not produce an immediate burning sensation, delaying awareness that contact has occurred. swelling. discomfort. redness. itching. pain. burns. allergic reaction in some individuals. Prolonged and repeated contact with skin can cause defatting and drying of the skin which may result in skin irritation and dermatitis. irritation.

Skin Absorption: No absorption hazard expected under normal use. No more than slightly toxic based on toxicity studies. Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: May be corrosive to the respiratory tract. Severe irritation and burns may result. Vapors or mists may irritate: respiratory tract. Serious cases of inhalation may cause: respiratory problems and late pulmonary edema. May irritate: mucous membranes. nose. throat. lungs. May cause: coughing. sneezing. shortness of

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breath. sore throat. chest discomfort. pain. allergic reaction in some individuals. Inhalation of high concentrations may cause: permanent damage.

Ingestion: CORROSIVE-Causes severe irritation and burns. May irritate or burn: mouth. throat. stomach. May cause: nausea. vomiting. abdominal discomfort. abdominal pain. burning sensation. Severe exposures may cause: shock. circulatory collapse. death. gastrointestinal irritation. diarrhea. gastrointestinal disturbances. burns. hypocalcemia (possible life-threatening lowering of serum calcium). Erosion of teeth is possible. No data available. Do not swallow.

Medical Conditions Aggravated By Exposure To Product: Eye disorders. Skin disorders. Impaired respiratory function. Respiratory system disorders. None known.

Other: In animals, effects have been reported on the following organs: lungs.

Cancer Information: This product does not contain 0.1% or more 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	0 - 5 %

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. Remove contact lens if easy to do. Remove contact lenses if worn.

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. Wash with soap and water. Flush skin with water for at least 15 minutes.

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. Keep at rest.

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. Give large amounts of water to drink.

Note to Physicians: Treatment is symptomatic and supportive.

5. FIRE FIGHTING MEASURES

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

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Extinguishing Media: Not flammable or combustible. For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. Foam. Alcohol foam. Water. DO NOT USE:

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. Move containers from fire area if possible without hazard.

Fire And Explosion Hazards: None known. This product may react with certain metals to produce flammable Hydrogen Gas.

Hazardous Combustion Products: Thermal decomposition may release: Phosphorous oxides. Phosphine. Toxic vapors. Carbon dioxide. Carbon monoxide. Dense smoke. No data available.

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. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Flush remaining area with water and neutralize with Soda Ash, Lime or Limestone and dispose of properly. Adequate ventilation is required if soda ash is used, because of the consequent release of carbon dioxide gas. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Flush remaining area with water and neutralize with Soda Ash or Lime and dispose of properly.

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. CORROSIVE MATERIAL.

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. May react with certain metals to produce flammable hydrogen gas. Protect against physical damage. Citric acid can release explosive hydrogen gas if in contact with reactive metals (iron, zinc, aluminum). Keep containers tightly closed.

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.

Note: + Vacated 1989 OSHA PEL(s).

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

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Engineering Controls: General room ventilation and local exhaust are required. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly. General room ventilation and/or local exhaust are required.

Eye/Face Protection: Wear chemical safety goggles and a full face shield while handling this product. Do not wear contact lenses. Wear additional eye protection such as a face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material.

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

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. 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. If dust or mist is present, wear: NIOSH-Approved respirator for dusts and mists. NIOSH-Approved self-contained breathing apparatus.

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.

Flash Point Method:

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Autoignition Temperature: No Data

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

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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. Avoid high temperatures. Avoid mist formation. Avoid elevated temperatures.

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. Fluorides. Halogenated organics. Alkalies. Strong bases. Carbonates. Acetates. Potassium Tartrate. Metal Nitrates. Bicarbonates. Reducing agents. Alkali metals. Aluminum. Magnesium. Corrosive effect on: Copper, aluminum, zinc and their alloys.

Hazardous Decomposition Products: Thermal decomposition may release: Phosphorous oxides. Phosphine. Reactions with other materials may liberate toxic and/or explosive gases. Carbon dioxide. Carbon monoxide. Smoke. No data available.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. 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. Phosphoric acid forms toxic fumes with cyanides, sulfides, fluorides, organic peroxides, and halogenated organics. Phosphoric acid mixtures with nitromethane are explosive.

11. TOXICOLOGICAL INFORMATION

LD50 Oral: No Data

LD50 Skin: No Data

LC50 Inhalation: No Data

PHOSPHORIC ACID:

Phosphoric acid has a low vapor pressure at room temperature and is not expected to present a significant inhalation hazard under ambient conditions. Phosphoric acid can, however, be irritating to the respiratory tract if inhaled as a mist or if the material is vaporized.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: No data available. **CITRIC ACID:**

Acute Aquatic Effects:

96-hour LC50 (Fathead Minnow): > 1,000 mg/L

96-hour LC50 (Water Flea): > 1,000 mg/L

96-hour LC50 (Goldfish): 440 - 706 mg/l

48-hour LC50 (Golden orfe minnow): 760 mg/L.

EC0 (bacteria): > 10,000 mg/L

Chemical Fate Information: No data available.

MATERIAL SAFETY DATA SHEET

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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. Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location. Dispose of in a licensed facility.

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)

Note: The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors. In the United States, it may be possible to reclassify this material as a Consumer Commodity ORM-D based on 49 CFR 173.154 (b)(c).

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.

This product or all components of this product are listed on the EPA/TSCA Inventory of Chemical Substances.

SARA Title III Section 311/312 Category:

Immediate (Acute) Health Hazard: Yes

Delayed (Chronic) Health Hazard: No

Fire Hazard: No

Sudden Release Of Pressure Hazard: No

Reactive Hazard: No

SARA Section 302/304/313/HAP:

<u>Component</u>	<u>CERCLA RQ</u>	<u>SARA RQ</u>	<u>SARA TPQ</u>	<u>SARA 313</u>	<u>U.S. HAP</u>
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)

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

MSDS ID: MI0895

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Replaces: 04-26-2006

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

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: Change made in Section 14.

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.