

MATERIAL SAFETY DATA SHEET

ICE MACHINE CLEANER M.I.I.

Product ID: MI089501

Revised: 01-04-2012

Replaces: 01-29-2009

1. PRODUCT AND COMPANY IDENTIFICATION

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

Manitowoc Ice
2110 South 26th Street
Manitowoc, WI 54220
(920) 682-0161
www.manitowocice.com

EMERGENCY RESPONSE NUMBER:
CHEMTREC Emergency # (US + Canada):
(800) 424-9300
CHEMTREC Emergency # (INTERNATIONAL):
+01-703-527-3887

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.

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

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.

Skin Absorption: No absorption hazard expected under normal use.

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 cause: coughing. shortness of breath. sore throat. chest discomfort. pain. 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.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Skin disorders. Impaired respiratory function. Respiratory system disorders.

Other: None known.

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>% by Wt.</u>
Phosphoric Acid	7664-38-2	< 40 %

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Citric Acid

77-92-9

< 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. Remove contact lens if easy to do.

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:

Treatment is symptomatic and supportive.

5. FIRE FIGHTING MEASURES

Extinguishing Media: For fires in area use appropriate media. For example: Water spray. Dry chemical. Carbon dioxide. 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: None known. This product may react with certain metals to produce flammable Hydrogen Gas.

Hazardous Combustion Products: Phosphorous oxides. Phosphine. Toxic vapors. Carbon dioxide. Carbon monoxide. Dense smoke.

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.

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. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
Phosphoric Acid	1 mg/m ³ TWA

ACGIH Exposure Guidelines:

<u>Component</u>	<u>Limits</u>
Phosphoric Acid	3 mg/m ³ STEL; 1 mg/m ³ TWA

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.

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. Neoprene. Nitrile.

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.

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 (neat)

Specific Gravity: 1.22-1.24 @ 25 Deg. C

% 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: N.A.

Lower Explosion Limit: N.A.

Upper Explosion Limit: N.A.

Autoignition Temperature: No Data

Fire Point: N.D.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

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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.

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. Carbonates. Acetates. Potassium Tartrate. Metal Nitrates. Bicarbonates. Aluminum. Magnesium. Corrosive effect on: Copper, aluminum, zinc and their alloys.

Hazardous Decomposition Products: Phosphorous oxides. Phosphine. Reactions with other materials may liberate toxic and/or explosive gases. Carbon dioxide. Carbon monoxide. Smoke.

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

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Phosphoric Acid	Rat: 1530 mg/kg	Rabbit: 2730 mg/kg	1H Rat: > 850 mg/m3
Citric Acid	Rat: 3000 mg/kg	No Data	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. 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.

14. TRANSPORTATION INFORMATION

DOT (Department of Transportation):

Identification Number: UN1760
Proper Shipping Name: Corrosive Liquid, N.O.S. (Contains Phosphoric Acid, Citric Acid)
Hazard Class: 8
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

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

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SARA Title III Section 311/312 Category Hazards:

<u>Immediate (Acute)</u> Yes	<u>Delayed (Chronic)</u> No	<u>Fire Hazard</u> No	<u>Pressure Release</u> No			<u>Reactive</u> No	
<u>Component</u>	<u>CAS Number</u>	<u>CERCLA RQ</u>	<u>SARA EHS</u>	<u>SARA 313</u>	<u>U.S. HAP</u>	<u>WI HAP</u>	<u>Prop 65</u>
Phosphoric Acid	7664-38-2	Yes	No	No	No	Yes	No

***Prop 65 - May Contain the Following Trace Components**

- Arsenic
- Lead
- Cadmium
- Mercury
- 1,4-Dioxane
- Propylene Oxide
- Ethylene Oxide

16. ADDITIONAL INFORMATION

Hazard 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: New format. Changes made throughout the MSDS.

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 MANITOWOC ICE assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.