

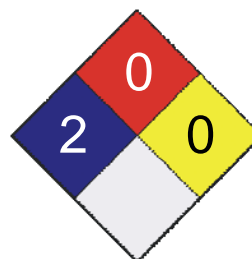
# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Product Name** Nickel-Safe Ice Machine Cleaner (4287)  
**CAS #** Mixture  
**Product use** Descaler  
**Manufacturer** Nu-Calgon  
 2008 Altom Court  
 St. Louis, MO 63146 US  
 Phone: 314-469-7000 / 800-554-5499  
 Emergency Phone: 1-800-424-9300 (CHEMTREC)

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 2
Flammability	0
Physical Hazard	0
Personal Protection	X



## 2. Hazards Identification

**Emergency overview** WARNING  
 EYE AND SKIN IRRITANT.

**Potential short term health effects**

**Routes of exposure** Eye, Skin contact, Inhalation, Ingestion.

**Eyes** May cause severe irritation or chemical burns.

**Skin** This product is non-corrosive based on test data. May cause mild skin irritation.

**Inhalation** Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).

**Ingestion** Harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Target organs** Eyes. Respiratory system. Skin.

**Chronic effects** Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.

**Signs and symptoms** Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

## 3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Phosphoric acid	7664-38-2	15 - 40
Citric acid	77-92-9	1 - 5

## 4. First Aid Measures

**First aid procedures**

**Eye contact** Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 15 minutes. Obtain medical attention immediately.

**Skin contact** Immediately flush with water. Wash with soap and water. Obtain medical attention if irritation persists.

**Inhalation** If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

**Ingestion** Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.

**General advice**

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

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## 5. Fire Fighting Measures

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<b>Flammable properties</b>	Not flammable by WHMIS/OSHA criteria.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Dry chemical. Foam. Carbon dioxide.
<b>Unsuitable extinguishing media</b>	Not available
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	Not available
<b>Protective equipment for firefighters</b>	Firefighters should wear full protective clothing including self contained breathing apparatus.
<b>Hazardous combustion products</b>	May include and are not limited to: Oxides of carbon. Oxides of phosphorus.
<b>Explosion data</b>	
<b>Sensitivity to mechanical impact</b>	Not available
<b>Sensitivity to static discharge</b>	Not available

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## 6. Accidental Release Measures

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<b>Personal precautions</b>	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
<b>Methods for containment</b>	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
<b>Methods for cleaning up</b>	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

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## 7. Handling and Storage

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<b>Handling</b>	Use good industrial hygiene practices in handling this material. Do not get this material in your eyes, on your skin, or on your clothing.
<b>Storage</b>	Keep out of the reach of children. Store in a closed container away from incompatible materials.

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## 8. Exposure Controls / Personal Protection

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<b>Exposure limits</b>	
<b>Ingredient(s)</b>	<b>Exposure Limits</b>
Citric acid	<b>ACGIH-TLV</b> TWA: 10 mg/m3 <b>OSHA-PEL</b> TWA: 10 mg/m3
Phosphoric acid	<b>ACGIH-TLV</b> TWA: 1 mg/m3 STEL: 3 mg/m3 <b>OSHA-PEL</b> TWA: 1 mg/m3
<b>Engineering controls</b>	General ventilation normally adequate.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Wear chemical goggles.
<b>Hand protection</b>	Rubber gloves. Confirm with a reputable supplier first.

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<b>Skin and body protection</b>	As required by employer code.
<b>Respiratory protection</b>	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Avoid breathing mists or vapors.
<b>General hygiene considerations</b>	Use good industrial hygiene practices in handling this material. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

## 9. Physical & Chemical Properties

<b>Appearance</b>	liquid.
<b>Color</b>	green
<b>Form</b>	Liquid
<b>Odor</b>	Mild chemical
<b>Odor threshold</b>	Not available
<b>Physical state</b>	Liquid
<b>pH</b>	< 1
<b>Melting point</b>	Not available
<b>Freezing point</b>	-18 °C (-0.40 °F)
<b>Boiling point</b>	> 93 °C (> 199.40 °F)
<b>Flash point</b>	None
<b>Evaporation rate</b>	Not available
<b>Flammability limits in air, lower, % by volume</b>	Not available
<b>Flammability limits in air, upper, % by volume</b>	Not available
<b>Vapor pressure</b>	Not available
<b>Vapor density</b>	Not available
<b>Specific gravity</b>	1.19
<b>Octanol/water coefficient</b>	Not available
<b>Solubility (H2O)</b>	Complete
<b>Auto-ignition temperature</b>	Not available
<b>VOC (Weight %)</b>	Not available
<b>Viscosity</b>	Not available
<b>Percent volatile</b>	Not available

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Reacts violently with alkaline material. This product may react with reducing agents. Do not mix with other chemicals.
<b>Incompatible materials</b>	Bases. Reducing agents.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of carbon. Oxides of phosphorus.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

### Component analysis - LC50

<b>Ingredient(s)</b>	<b>LC50</b>
Citric acid	Not available
Phosphoric acid	Not available

### Component analysis - Oral LD50

<b>Ingredient(s)</b>	<b>LD50</b>
Citric acid	5040 mg/kg mouse; 3000 mg/kg rat
Phosphoric acid	1530 mg/kg rat

### Effects of acute exposure

<b>Eye</b>	May cause severe irritation or chemical burns.
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<b>Skin</b>	This product is non-corrosive based on test data. May cause mild skin irritation.
<b>Inhalation</b>	Excessive intentional inhalation may cause respiratory tract irritation and central nervous system effects (headache, dizziness).
<b>Ingestion</b>	Harmful if swallowed. May cause stomach distress, nausea or vomiting.
<b>Sensitization</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Chronic effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Carcinogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Mutagenicity</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Reproductive effects</b>	Non-hazardous by WHMIS/OSHA criteria.
<b>Teratogenicity</b>	Non-hazardous by WHMIS/OSHA criteria.

## 12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns.	
Ecotoxicity - Freshwater Fish Species Data		
Citric acid	77-92-9	96 Hr LC50 <i>Lepomis macrochirus</i> : 1516 mg/L [static]; 96 Hr LC50 <i>Leuciscus idus</i> : 440 mg/L [static]
Phosphoric acid	7664-38-2	96 Hr LC50 <i>Gambusia affinis</i> : 3-3.5 mg/L
Ecotoxicity - Microtox Data		
Citric acid	77-92-9	15 Min EC50 <i>Photobacterium phosphoreum</i> : 14 mg/L
Ecotoxicity - Water Flea Data		
Citric acid	77-92-9	72 Hr EC50 <i>Daphnia magna</i> : 120 mg/L
Phosphoric acid	7664-38-2	12 Hr EC50 <i>Daphnia magna</i> : 4.6 mg/L
Environmental effects	Not available	
Aquatic toxicity	Not available	
Persistence / degradability	Not available	
Bioaccumulation / accumulation	Not available	
Partition coefficient	Not available	
Mobility in environmental media	Not available	
Chemical fate information	Not available	

## 13. Disposal Considerations

<b>Waste codes</b>	Not available
<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations.
<b>Waste from residues / unused products</b>	Not available
<b>Contaminated packaging</b>	Not available

## 14. Transport Information

<b>U.S. Department of Transportation (DOT)</b>	Not regulated as dangerous goods.
<b>Transportation of Dangerous Goods (TDG - Canada)</b>	Not regulated as dangerous goods.

## 15. Regulatory Information

<b>Canadian federal regulations</b>	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.	
<b>Canada - WHMIS - Ingredient Disclosure List</b>		
Citric acid	77-92-9	1 %
Phosphoric acid	7664-38-2	1 %
<b>US Federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
<b>U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities</b>		
Phosphoric acid	7664-38-2	5000 Lb final RQ; 2270 kg final RQ

**Occupational Safety and Health Administration (OSHA)**

29 CFR 1910.1200 hazardous chemical Yes

**CERCLA (Superfund) reportable quantity**

Phosphoric acid: 5000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance** No

**Section 311 hazardous chemical** Yes

**Clean Air Act (CAA)** Not available

**Clean Water Act (CWA)** Not available

**Safe Drinking Water Act (SDWA)** Not available

**Drug Enforcement Agency (DEA)** Not available

**Food and Drug Administration (FDA)** Not available

**WHMIS status** Controlled

**WHMIS classification** Class D - Division 2B

**WHMIS labeling**

**State regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances**

Phosphoric acid 7664-38-2 Present

**U.S. - Louisiana - Reportable Quantity List for Pollutants**

Phosphoric acid 7664-38-2 5000 Lb final RQ; 2270 kg final RQ

**U.S. - Massachusetts - Right To Know List**

Phosphoric acid 7664-38-2 Present

**U.S. - Minnesota - Hazardous Substance List**

Phosphoric acid 7664-38-2 Present

**U.S. - New Jersey - Right to Know Hazardous Substance List**

Phosphoric acid 7664-38-2 sn 1516

**U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances**

Phosphoric acid 7664-38-2 5000 Lb RQ (air); 100 lb RQ (land/water)

**U.S. - Pennsylvania - RTK (Right to Know) List**

Phosphoric acid 7664-38-2 Environmental hazard

**U.S. - Rhode Island - Hazardous Substance List**

Phosphoric acid 7664-38-2 Toxic; Flammable

**Inventory name**

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

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## 16. Other Information

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**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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