

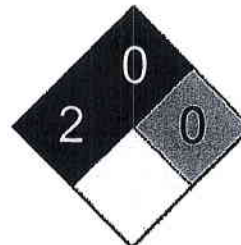
MATERIAL SAFETY DATA SHEET

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
		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.

5. Fire Fighting Measures

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

6. Accidental Release Measures

Personal precautions	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.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	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.

7. Handling and Storage

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

8. Exposure Controls / Personal Protection

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

Skin and body protection	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Avoid breathing mists or vapors.
General hygiene considerations	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

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

10. Chemical Stability & Reactivity Information

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

11. Toxicological Information

Component analysis - LC50	
Ingredient(s)	LC50
Citric acid	Not available
Phosphoric acid	Not available
Component analysis - Oral LD50	
Ingredient(s)	LD50
Citric acid	5040 mg/kg mouse; 3000 mg/kg rat
Phosphoric acid	1530 mg/kg rat
Effects of acute exposure	
Eye	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.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	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
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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

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

14. Transport Information

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

15. Regulatory Information

Canadian federal regulations 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.

Canada - WHMIS - Ingredient Disclosure List

Citric acid	77-92-9	1%
Phosphoric acid	7664-38-2	1%

US Federal regulations 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.

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

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

16. Other Information

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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Prepared by

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