



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Product name** Nickel-Safe Ice Machine Cleaner (4287)  
**CAS #** Mixture  
**Product Use** Cleaning scale from ice machines  
**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)

## 2. Hazards Identification

**Emergency overview** WARNING  
Corrosive to metal. Causes serious eye damage. Causes skin irritation.

**Potential short term health effects**

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

**Eyes** Avoid contact with eyes. May cause severe irritation or chemical burns.

**Skin** Avoid contact with the skin. This product is non-corrosive based on test data.

**Inhalation** Prolonged inhalation may be harmful. Avoid breathing dust/fume/gas/mist/vapours/spray.

**Ingestion** Do not ingest. Harmful if swallowed. May cause stomach distress, nausea or vomiting. Components of the product may be absorbed into the body by ingestion.

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

**Signs and symptoms** Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Permanent eye damage including blindness could result. May cause redness and pain.

**Potential environmental effects** Components of this product have been identified as having potential environmental concerns.

## 3. Composition/Information on Ingredients

Components	CAS #	Percent
Phosphoric acid	7664-38-2	15 - 40
Citric acid	77-92-9	3 - 7

## 4. First Aid Measures

**First aid procedures**

**Eye contact** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

**Skin contact** If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

**Inhalation** Move to fresh air. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Ingestion** If swallowed, do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.

**Notes to physician** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

**General advice** Avoid contact with eyes and skin. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).

## 5. Fire Fighting Measures

**Flammable properties** Not flammable by WHMIS criteria.

<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Dry chemical powder. Foam. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Protective equipment for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<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. Keep out of low areas. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not contaminate water. Contact local authorities in case of spillage to drain/aquatic environment.
<b>Methods for cleaning up</b>	Ventilate the contaminated area. Wear appropriate protective equipment and clothing during clean-up. Should not be released into the environment.  Large Spills: Dike the spilled material, where this is possible. Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.  Never return spills to original containers for re-use. This material and its container must be disposed of as hazardous waste. For waste disposal, see section 13.

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## 7. Handling and Storage

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<b>Handling</b>	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Avoid contact with clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
<b>Storage</b>	Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the MSDS).

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## 8. Exposure Controls/Personal Protection

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### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m <sup>3</sup>
	TWA	1 mg/m <sup>3</sup>

**Exposure limits**                      Chemicals listed in section 3 that are not listed here do not have established limit values for ACGIH.

<b>Engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.
<b>Personal protective equipment</b>	
<b>Eye/Face protection</b>	Chemical goggles are recommended.
<b>Hand protection</b>	Rubber gloves. Confirm with a reputable supplier first.
<b>Skin and body protection</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	Not normally required if good ventilation is maintained.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

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## 9. Physical and Chemical Properties

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<b>Appearance</b>	Liquid
<b>Colour</b>	Green
<b>Form</b>	Liquid.
<b>Odour</b>	Mild chemical
<b>Odour threshold</b>	Not available.
<b>Physical state</b>	Liquid.
<b>pH</b>	< 1
<b>Freezing point</b>	-18 °C (-0.4 °F)
<b>Boiling point</b>	> 93 °C (> 199.4 °F)
<b>Pour point</b>	Not available.
<b>Evaporation rate</b>	Not available
<b>Flash point</b>	None
<b>Auto-ignition temperature</b>	Not available
<b>Flammability Limits in Air, Upper, % by Volume</b>	Not available
<b>Flammability Limits in Air, Lower, % by Volume</b>	Not available
<b>Heat of combustion</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available
<b>Specific gravity</b>	1.19
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Solubility (Water)</b>	Complete
<b>Relative density</b>	Not available.
<b>Viscosity</b>	Not available.
<b>VOC</b>	Not available
<b>Percent volatile</b>	Not available

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## 10. Stability and Reactivity

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<b>Reactivity</b>	Corrosive to metals.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals.
<b>Incompatible materials</b>	This product may react with reducing agents. Incompatible with bases.
<b>Hazardous decomposition products</b>	May include and are not limited to: Oxides of carbon. Oxides of phosphorus.

## 11. Toxicological Information

### Toxicological data

Components	Species	Test results
Citric acid (CAS 77-92-9)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Mouse	5040 mg/kg
	Rat	3000 mg/kg
Phosphoric acid (CAS 7664-38-2)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	2740 mg/kg
<i>Inhalation</i>		
LC50	Not available	
<i>Oral</i>		
LD50	Rat	1530 mg/kg

### Effects of acute exposure

<b>Eye contact</b>	Avoid contact with eyes. May cause severe irritation or chemical burns.
<b>Skin contact</b>	Avoid contact with the skin. This product is non-corrosive based on test data.
<b>Inhalation</b>	Prolonged inhalation may be harmful. Avoid breathing dust/fume/gas/mist/vapours/spray.
<b>Ingestion</b>	Do not ingest. Harmful if swallowed. May cause stomach distress, nausea or vomiting. Components of the product may be absorbed into the body by ingestion.

<b>Sensitisation</b>	Non-hazardous by WHMIS criteria.
<b>Chronic effects</b>	Prolonged inhalation may be harmful.
<b>Carcinogenicity</b>	Non-hazardous by WHMIS criteria.
<b>Mutagenicity</b>	Non-hazardous by WHMIS criteria.
<b>Reproductive effects</b>	Non-hazardous by WHMIS criteria.
<b>Teratogenicity</b>	Non-hazardous by WHMIS criteria.
<b>Name of Toxicologically Synergistic Products</b>	Not available.

## 12. Ecological Information

<b>Ecotoxicity</b>	Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
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### Ecotoxicological data

Components	Species	Test results	
Citric acid (CAS 77-92-9)			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	120 mg/l, 72 hr
<b>Aquatic</b>			
<i>Acute</i>			
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )	1516 mg/l, 96 hr

<b>Persistence and degradability</b>	Not available.
<b>Bioaccumulation/accumulation</b>	Not available.
<b>Mobility in environmental media</b>	Not available.
<b>Environmental effects</b>	Not available.

Aquatic toxicity Not available.  
Partition coefficient Not available.  
Chemical fate information Not available.

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### 13. Disposal Considerations

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Waste from residues / unused products Not available  
Contaminated packaging Not available

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### 14. Transport Information

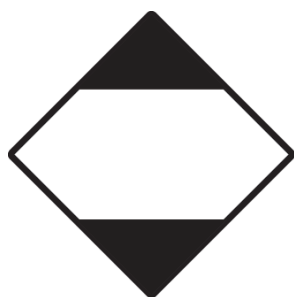
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#### Transportation of Dangerous Goods (TDG - Canada)

##### Basic shipping requirements:

UN number UN3264  
Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid)  
Hazard class Limited Quantity - Canada  
Packing group III  
Special provisions 16  
Packaging exceptions < 5L - Limited Quantity

TDG



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### 15. Regulatory Information

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**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: Threshold limits

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

**WHMIS status** Controlled

**WHMIS Classification** Class D - Division 2B, Class E - Corrosive Material

#### WHMIS labeling



#### Inventory status

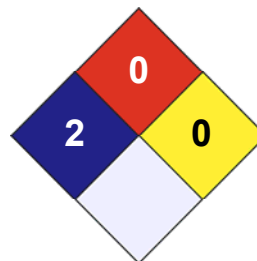
Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

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

## 16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/	2
FLAMMABILITY		0
PHYSICAL HAZARD		0
PERSONAL PROTECTION		X



### 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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15-August-2017

### Prepared by

Nu-Calgon Technical Service Phone: (314) 469-7000

### Other information

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.