SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	**Nickel-Safe Ice Machine Cleaner (4287-08, 4287-34, 4841-AB, 4841-08)**
Other means of identification	Not available
Recommended use	Cleaning scale from ice machines
Recommended restrictions	None known.
Manufacturer information	Nu-Calgon 2611 Schuetz Road St. Louis, MO 63043 US Phone: 314-469-7000 / 800-554-5499 Emergency Phone: 1-800-424-9300 (CHEMTREC)
Supplier	See above.

2. Hazards Identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
Environmental hazards	Not classified.	
WHMIS 2015 defined hazards	Not classified	

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes skin irritation. Causes serious eye damage.
Precautionary statement	
Prevention	Wear eye protection. Wear protective gloves. Wash thoroughly after handling. Keep only in original packaging.
Response	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 or doctor. IF ON SKIN: Wash with plenty of water. Specific treatment (see information on this label). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.
Storage	Store in a corrosion resistant container with a resistant inner liner.
Disposal	Dispose of container in accordance with local, regional, national and international regulations.
WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)	None known
WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)	None known
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Not applicable.

3. Composition/Information on Ingredients

Mixture

Chemical name	Common name and synonyms	CAS number	%
Citric Acid		77-92-9	1-5*
Phosphoric acid		7664-38-2	15-40*

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments	US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200. *CANADA GHS: The exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

Inhalation	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.
Skin contact	IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical attention. Specific treatment (see information on this label). Take off contaminated clothing and wash it before reuse.
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 or doctor.
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.
Most important symptoms/effects, acute and delayed	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire Fighting Measures

Suitable extinguishing media	Dry chemical powder. Foam. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazardous combustion products	May include and are not limited to: Oxides of carbon. Oxides of phosphorus.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	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 of the SDS.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Should not be released into the environment. Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. 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. For waste disposal, see section 13 of the SDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and Storage

Precautions for safe handling	Avoid contact with eyes, skin and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Use care in handling/storage.
Conditions for safe storage, including any incompatibilities	Store in a corrosion resistant container with a resistant inner liner. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure Controls/Personal Protection

Occupational exposure limits

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Impervious gloves. Confirm with reputable supplier first.

Other Wear appropriate chemical resistant clothing.

Respiratory protection Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

Thermal hazards	Not available.
General hygiene considerations	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.

9. Physical and Chemical Properties

Appearance	Liquid
Physical state	Liquid.
Form	Liquid.
Color	Green
Odor	Mild chemical
Odor threshold	Not available.
pH	< 1
Melting point/freezing point	-0.4 °F (-18 °C)
Initial boiling point and boiling range	> 199.4 °F (> 93 °C)
Pour point	Not available.
Specific gravity	Not available.
Partition coefficient (n-octanol/water)	Not available
Flash point	None
Evaporation rate	Not available
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available
Flammability limit - upper (%)	Not available
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available
Relative density	1.19
Solubility(ies)	Complete
Auto-ignition temperature	Not available
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and Reactivity

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

11. Toxicological Information

Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Information on likely routes of exposure	
Ingestion	May cause stomach distress, nausea or vomiting.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Skin irritation.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Citric Acid (CAS 77-92-9)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Not available	
Oral		
LD50	Mouse	5400 mg/kg, ECHA
		5040 mg/kg, HSDB
	Rat	11700 mg/kg, ECHA
		6730 mg/kg, HSDB
Phosphoric acid (CAS 7664-38-2)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, ECHA
		2740 mg/kg, RTECS
Inhalation		
LC50	Guinea pig, Mouse, Rabbit, Rat	5337 mg/m3, 1 Hours, ECHA
		3846 mg/m3, 1 Hours, ECHA
		1689 mg/m3, 1 Hours, ECHA
		1217 mg/m3, 1 Hours, ECHA
		856 mg/m3, 1 Hours, ECHA
		271 mg/m3, 1 Hours, ECHA
		193 mg/m3, 1 Hours, ECHA
		61 mg/m3, 1 Hours, ECHA
Oral		
LD50	Rat	1530 mg/kg, RTECS
		1.7 ml/100g, ECHA

Skin corrosion/irritation Causes skin irritation.

Exposure minutes Not available.

Erythema value Not available.

Oedema value Not available.

Serious eye damage/eye irritation Causes serious eye damage.

Corneal opacity value Not available.

Iris lesion value Not available.

Conjunctival reddening value Not available.

Conjunctival oedema value Not available.

Recover days Not available.

Respiratory or skin sensitization

Canada - Alberta OELs: Irritant

Phosphoric acid (CAS 7664-38-2) Irritant

Respiratory sensitization Not available.

Skin sensitization This product is not expected to cause skin sensitization.

Mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Teratogenicity Not available.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological Information

Ecotoxicity Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Ecotoxicological data

Components		Species	Test Results
Citric Acid (CAS 77-92-9)			
Acute			
Crustacea	EC50	Daphnia magna	120 mg/L, 72 hr
Aquatic			
Acute			
Fish	LC50	Bluegill (Lepomis macrochirus)	1516 mg/L, 96 hr
Phosphoric acid (CAS 7664-38-2)			
Aquatic			
Acute			
Crustacea	LC50	Water flea (Daphnia magna)	4.6 mg/L, 12 hr
Fish	LC50	Mosquitofish (Gambusia affinis affinis)	3 - 3.5 mg/L, 96 hr

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential Not available.

Mobility in soil Not available.

Mobility in general Not available.

Other adverse effects Not available.

13. Disposal Considerations

Disposal instructions Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

Transport of Dangerous Goods (TDG) Proof of Classification Classification Method: Classified as per Part 2, Sections 2.1 – 2.8 of the Transportation of Dangerous Goods Regulations. If applicable, the technical name and the classification of the product will appear below.

U.S. Department of Transportation (DOT)

Basic shipping requirements:

UN number UN3264
Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
Technical name Phosphoric acid
Hazard class Limited Quantity - US
Packing group III
Special provisions IB3, T7, TP1, TP28
Packaging exceptions 154

Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

UN number	UN3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name	Phosphoric acid
Hazard class	Limited Quantity - Canada
Packing group	III
Special provisions	16

IATA/ICAO (Air)

Basic shipping requirements:

UN number	UN3264
Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s.
Technical name	Phosphoric acid
Hazard class	Limited Quantity - IATA
Packing group	III

IMDG (Marine Transport)

Basic shipping requirements:

UN number	UN3264
Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Technical name	Phosphoric acid
Hazard class	Limited Quantity - IMDG
Packing group	III

DOT; IMDG; TDG



IATA



15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

WHMIS 2015 Exemptions Not applicable

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All chemicals used are on the TSCA inventory.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric acid (CAS 7664-38-2) Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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

SARA 302 Extremely hazardous substance: No

SARA 311/312 Hazardous chemical: No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

US state regulations: See below

US - California Hazardous Substances (Director's): Listed substance

Phosphoric acid (CAS 7664-38-2) — Listed.

US - Illinois Chemical Safety Act: Listed substance

Phosphoric acid (CAS 7664-38-2)

US - Louisiana Spill Reporting: Listed substance

Phosphoric acid (CAS 7664-38-2) — Listed.

US - Minnesota Haz Subs: Listed substance

Phosphoric acid (CAS 7664-38-2) — Listed.

US - New Jersey RTK - Substances: Listed substance

Phosphoric acid (CAS 7664-38-2)

US - Texas Effects Screening Levels: Listed substance

Citric Acid (CAS 77-92-9) — Listed.
Phosphoric acid (CAS 7664-38-2) — Listed.

US. Massachusetts RTK - Substance List

Phosphoric acid (CAS 7664-38-2)

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law

Phosphoric acid (CAS 7664-38-2)

US. Rhode Island RTK

Phosphoric acid (CAS 7664-38-2)

US. California Proposition 65

Not Listed.

Inventory status

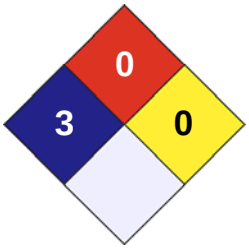
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

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

16. Other Information

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 3
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. The above SDS reflects the latest information on file with respect to hazards, properties and handling of this product. No warranty however, expressed or implied, is made with regard to the use of this information.
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