



SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	Ice Guard Plus (4209-07)
Other means of identification	Not available
Recommended use	Water treatment
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	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
WHMIS 2015 defined hazards	Not classified
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
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	This product is a manufactured article and is exempt.

As per OSHA Definitions: 1910.1200 (c). Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardous chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk to employees.

As per the Hazardous Products Act: A manufactured article means any article that is formed to a specific shape or design during manufacture, the intended use of which when in that form is dependent in whole or in part on its shape or design, and that, when being installed, if the intended use of the article requires it to be installed, and under normal conditions of use, will not release or otherwise cause an individual to be exposed to a hazardous product.

3. Composition/Information on Ingredients

Mixture			
Chemical name	Common name and synonyms	CAS number	%
Aluminum oxide		1344-28-1	80-100*
Copper		7440-50-8	1-5*

Chemical name	Common name and synonyms	CAS number	%
Silver		7440-22-4	0.1-1*

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

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

4. First Aid Measures

Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Skin contact	Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.
Eye contact	Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.
Ingestion	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	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat patient symptomatically.
General information	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

Suitable extinguishing media	Treat for surrounding material.
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.
General fire hazards	No unusual fire or explosion hazards noted.
Hazardous combustion products	May include and are not limited to: Copper oxides. Oxides of aluminum.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Do not discharge into lakes, streams, ponds or public waters.

7. Handling and Storage

Precautions for safe handling	Avoid prolonged exposure. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. When using do not eat or drink.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. Exposure Controls/Personal Protection

Occupational exposure limits

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

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m3	

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		1.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	STEL	1.3 mg/m3	
	TWA	0.01 mg/m3	

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

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	Dust and fume.

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

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and fume.
		0.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	Dust and fume.

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

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m3	Total dust.
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	

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

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Copper (CAS 7440-50-8)	PEL	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Silver (CAS 7440-22-4)	PEL	0.01 mg/m3	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	Dust and fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m ³ 0.1 mg/m ³	Dust and mist. Fume.
Silver (CAS 7440-22-4)	TWA	0.01 mg/m ³	Dust.

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.
Skin protection	
Hand protection	Impervious gloves. Confirm with reputable supplier first.
Other	Wear suitable protective clothing. As required by employer code.
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 applicable.
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. When using do not eat or drink.

9. Physical and Chemical Properties

Appearance	Solid.
Physical state	Solid.
Form	Solid.
Color	White Green
Odor	Odorless
Odor threshold	Not available.
pH	7
Melting point/freezing point	Not available.
Initial boiling point and boiling range	5432 °F (3000 °C)
Pour point	Not available.
Specific gravity	Not available.
Partition coefficient (n-octanol/water)	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
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	Not available.
Solubility(ies)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and Reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Keep away from extreme heat.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	May include and are not limited to: Copper oxides. Oxides of aluminum.

11. Toxicological Information

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

Information on likely routes of exposure

Ingestion	May cause stomach distress, nausea or vomiting.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged skin contact may cause skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects**Acute toxicity**

Components	Species	Test Results
Aluminum oxide (CAS 1344-28-1)		
Acute		
<i>Dermal</i>		
LD50	Not available	
<i>Inhalation</i>		
LC50	Rat	> 10 mg/L, 4 Hours, ECHA > 2.3 mg/L, 4 Hours, ECHA > 0.9 mg/L, 4 Hours 7.6 mg/L, 1 Hours
<i>Oral</i>		
LD50	Rat	> 15900 mg/kg, 14 days, ECHA > 10000 mg/kg, Sigma Aldrich > 2000 mg/kg, ECHA 5000 mg/kg, EMD Millipore
Copper (CAS 7440-50-8)		
Acute		
<i>Dermal</i>		
LD50	Rat	> 2000 mg/kg, ECHA > 2000 mg/kg, 24 Hours
<i>Inhalation</i>		
LC50	Rat	> 5.1 mg/l/4h, ECHA > 5.1 mg/L, 4 Hours
<i>Oral</i>		
LD50	Rat	> 2500 mg/kg 482 mg/kg, ECHA, female rat 481 mg/kg, ECHA, male rat

Components	Species	Test Results
Silver (CAS 7440-22-4)		
Acute		
<i>Dermal</i>		
LD50	Guinea pig	> 348 mg/kg, 24 Hours
	Rat	> 2000 mg/kg
		> 2000 mg/kg, 24 Hours
<i>Inhalation</i>		
LC50	Rat	> 5.2 mg/L, 4 Hours
		750 µg/m ³ , 4 Hours
<i>Oral</i>		
LD50	Mouse	> 5000 mg/kg
	Rat	> 5000 mg/kg
		3702 mg/kg
		2000 mg/kg
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Exposure minutes	Not available.	
Erythema value	Not available.	
Oedema value	Not available.	
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.	
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		
Respiratory sensitization	Not a respiratory sensitizer.	
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	See below.	
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 an aspiration hazard.	
Chronic effects	Prolonged inhalation may be harmful.	

12. Ecological Information

Components	Species	Test Results
Ecotoxicity		
See below		
Ecotoxicological data		
Copper (CAS 7440-50-8)		
Algae	IC50	Algae
Crustacea	EC50	Daphnia
		0.048 mg/L, 72 Hours
		0.03 mg/L, 48 Hours
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
Fish	LC50	Fathead minnow (Pimephales promelas)
		0.032 - 0.054 mg/L, 96 hours

Components	Species	Test Results
Silver (CAS 7440-22-4)		
Crustacea	EC50	Daphnia
		0 mg/L, 48 Hours
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>)
		0.002 - 0.003 mg/L, 96 hours
Persistence and degradability	No data is available on the degradability of this product.	
Bioaccumulative potential	No data available.	
Mobility in soil	No data available.	
Mobility in general	Not available.	
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.	

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
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. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

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)	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 HPR and the SDS contains all the information required by the HPR.
Canada CEPA Schedule I: Listed substance	
Aluminum oxide (CAS 1344-28-1)	Listed.
Canada Priority Substances List (Second List): Listed substance	
Aluminum oxide (CAS 1344-28-1)	Listed.
Export Control List (CEPA 1999, Schedule 3)	Not listed.
Greenhouse Gases	Not listed.
Precursor Control Regulations	Not regulated.
WHMIS 2015 Exemptions	This product is a manufactured article and is exempt.
US federal regulations	This product is NOT known to be 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)	
Copper (CAS 7440-50-8)	Listed.
Silver (CAS 7440-22-4)	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 - No
 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)

Chemical name	CAS number	% by wt.
Aluminum oxide	1344-28-1	80-100*
Copper	7440-50-8	1-5*

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

Aluminum oxide (CAS 1344-28-1) Listed.
 Copper (CAS 7440-50-8) Listed.
 Silver (CAS 7440-22-4) Listed.

US - Illinois Chemical Safety Act: Listed substance

Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

US - Louisiana Spill Reporting: Listed substance

Copper (CAS 7440-50-8) Listed.
 Silver (CAS 7440-22-4) Listed.

US - Michigan Critical Materials Register: Parameter number

Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

US - Minnesota Haz Subs: Listed substance

Aluminum oxide (CAS 1344-28-1) Listed.
 Copper (CAS 7440-50-8) Listed.
 Silver (CAS 7440-22-4) Listed.

US - New Jersey RTK - Substances: Listed substance

Aluminum oxide (CAS 1344-28-1)
 Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

US - Texas Effects Screening Levels: Listed substance

Aluminum oxide (CAS 1344-28-1) Listed.
 Copper (CAS 7440-50-8) Listed.
 Silver (CAS 7440-22-4) Listed.

US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1)
 Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

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

Aluminum oxide (CAS 1344-28-1)
 Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

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

Aluminum oxide (CAS 1344-28-1)
 Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

US. Rhode Island RTK

Aluminum oxide (CAS 1344-28-1)
 Copper (CAS 7440-50-8)
 Silver (CAS 7440-22-4)

US. California Proposition 65

This product is not subject to warning labeling under the California Proposition 65 regulation.

Inventory status

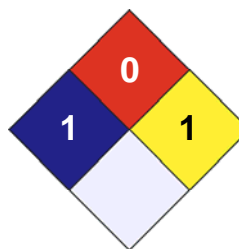
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*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	/ 1
FLAMMABILITY	0
PHYSICAL HAZARD	1
PERSONAL PROTECTION	X

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. 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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Other information

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