


### SECTION 1. IDENTIFICATION

Product Form	Solid Pellets
Substance Name	Calcium Chloride
Product Code	Calcium
Other Means Of Identification	None
Recommended Use	For industrial use. Agricultural. Snow and Ice Melting. Brine treatment.
Restrictions on Use	Not for Ingestion
Initial Supplier Identifier	NSC Minerals Ltd. 2241 Speers Ave Saskatoon, SK CANADA S7L 5X6 <a href="http://www.nscminerals.com">www.nscminerals.com</a> Email: <a href="mailto:nsc@nscminerals.com">nsc@nscminerals.com</a>
Emergency Telephone Number	1-306-934-6477 / 1-888-668-7258

### SECTION 2. HAZARD IDENTIFICATION

Classification	Acute toxicity - Oral Category 4 Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 2B	
Label Elements	None	
Signal Word (GHS-US)	Warning	
Hazard Statements (GHS-US)	Harmful if swallowed Causes skin irritation Causes eye irritation	
Precautionary Statements	<i>Prevention</i> – Wear protective gloves/protective clothing / eye protection / face protection. <i>Response</i> – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth <i>Disposal</i> – Dispose of contents/container to an approved waste disposal plant.	
Other Hazards	None Identified.	

### SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name / Synonyms Calcium Chloride

INGREDIENT NAME	% (W/W)	CAS NO.
Calcium Chloride	90-100%	10043-52-4
Potassium Chloride	0-10%	7447-40-7
Sodium Chloride	0-10%	7647-14-5
Calcium Bromide	0-10%	7789-41-5

**SECTION 4. FIRST AID MEASURES****4.1 FIRST AID BY ROUTE OF EXPOSURE**

<b>General</b>	If medical advice is needed, have product container or label at hand for the doctor in attendance.
<b>Inhalation</b>	If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Obtain medical attention if breathing difficulty persists.
<b>Skin Contact</b>	Wash skin thoroughly with mild soap and water. Obtain medical attention if irritation develops or persists.
<b>Eye Contact</b>	Immediately rinse with water for a prolonged period (15 minutes) while holding the eyelids wide open including upper and lower lids. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth immediately. Do not induce vomiting. Administer water if patient is conscious. Seek medical attention if a large amount is swallowed. Get medical advice and attention if you feel unwell.

**4.2 Most Important Symptoms and effects, both acute and delayed.**

Ingestion may cause gastrointestinal irritation or ulceration. Harmful if large amounts are swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. Vapors are unlikely due to physical properties. Dusts may cause severe irritation with corneal injury. Effects may be slow to heal. When dissolving, the heat produced may cause more intense effects as well as thermal burns. Prolonged or repeated exposure may cause skin irritation, even a burn. Single dose oral toxicity is low. A single exposure is not likely to result in the material being absorbed through the skin in harmful amounts. No significant irritation expected from a single short-term exposure. When dissolving, the heat produced may cause more intense effects as well as thermal burns. May cause more severe response if skin is damp. May cause nose and throat irritation. Dust may be irritating to the respiratory tract. May cause more severe response if confined to skin or skin is abraded (scratched or cut).

**4.3 Most Important Symptoms and effects, both acute and delayed.**

Note to physicians If burn is present, treat as any thermal burn, after decontamination. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower GI tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**SECTION 5. FIRE-FIGHTING MEASURES****5.1 EXTINGUISHING MEDIA**

<b>Suitable Extinguishing Media</b>	Not Flammable. Non-Combustible. Isolate area and use extinguishing media appropriate for surrounding fire.
<b>Unsuitable Extinguishing Media</b>	None known.

**5.2 SPECIFIC HAZARDS ARISING FROM PRODUCT**

<b>Fire Hazard</b>	This material does not burn. Fight fire for other material that is burning. Use water spray to cool fire-exposed containers and structures. Heat is generated when product mixes with water. Isolate and restrict area access.
<b>Explosion Hazard</b>	Not considered an explosion hazard.

**5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE-FIGHTERS**

<b>Fire-fighting Instructions</b>	Keep Upwind. Under conditions of fire this material may produce Calcium oxides; Hydrogen chloride gas.
<b>Protection during fire-fighting</b>	Wear full fire-fighting turn out gear (full Bunker gear) and respiratory protection (SCBA).

**Other Information**

Do not allow run-off from fire fighting to enter drains or water courses.

**SECTION 6. ACCIDENTAL RELEASE MEASURE****6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES**

<b>General Measures</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
<b>Protective Equipment for Emergency &amp; Non-Emergency Personnel</b>	Wear suitable protective clothing, gloves and eye/face protection including tight fitting goggles in areas of high fume concentration. Wear NIOSH approved respiratory protective equipment when workplace conditions warrant use of respirator.
<b>Spills</b>	Isolate area, eliminate source and contain spilled material if possible, recover material and reuse or collect for disposal. Prevent spills from entering sewers or waterways.

**6.2 ENVIRONMENTAL PRECAUTIONS**

If spill could potentially enter any waterway, including intermittent dry creeks or in case of accident or road spill notify CHEMTREC at 800-424-9300 (in USA) or CANUTEC at 613-996-6666 (in Canada). In other countries call CHEMTREC at (International code) +1-703-527-3887.

**6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP**

<b>For Containment</b>	Contain and collect all material. Do not allow into soils, ditches, drains or water courses or dispose of where ground or surface waters may be affected.
<b>Methods for Cleaning Up</b>	Recover the product by vacuuming or suitable tools / PME into suitable containers. If uncontaminated, recover and reuse as product.

**SECTION 7. HANDLING AND STORAGE****7.1 PRECAUTIONS FOR SAFE HANDLING**

<b>Precautions for Safe Handling</b>	Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 27°C). For industrial use only. Handle and open containers with care. Avoid contact with eyes, skin and clothing.  Do not ingest. Avoid inhalation of chemical. Empty containers may contain hazardous product residues. Keep the containers closed when not in use. Protect against physical damage. Use appropriate personnel protective equipment.
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**7.2 CONDITIONS FOR SAFE STORAGE**

<b>Storage Conditions:</b>	Protect against moisture. Keep containers tightly closed. Store in a cool, dry, well ventilated area.
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**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION****8.1 CONTROL PARAMETERS**

Chemical Name	Alberta OEL	BC OEL	Ontario	Quebec OEL	Exposure Limit - ACGIH	Immediately Dangerous to Life or Health - IDLH
Calcium Chloride	Not available	Not available	TWA: 5 mg/m <sup>3</sup>	Not available	Not available	Not available
Potassium Chloride	Not available	Not available	Not available	Not available	Not available	Not available
Sodium Chloride	Not available	Not available	Not available	Not available	Not available	Not available
Calcium bromide	Not available	Not available	Not available	Not available	Not available	Not available

**8.2 EXPOSURE CONTROLS**

<b>Appropriate engineering controls:</b>	Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.	
<b>Personal protective equipment:</b>	Gloves. Safety glasses. Protective clothing.	
<b>Hand Protection:</b>	Neoprene gloves. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials as well as the instructions/specifications provided by the glove supplier. Nitrile gloves.  Vinyl gloves. Appropriate chemical resistant gloves should be worn. Polyvinylchloride (PVC) gloves.	
<b>Eye Protection:</b>	Chemical safety glasses with side shields or splash proof goggles.	
<b>Skin and Body Protection:</b>	Wear suitable protective clothing	
<b>Footwear:</b>	Normal	
<b>Respiratory Protection:</b>	If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator. Respirator must have a chemical cartridge and particulate filter.	

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Solid Pellets
<b>Color</b>	White
<b>Odor</b>	Odorless
<b>Odor threshold</b>	No data available
<b>pH</b>	No data available
<b>Relative Evaporation Rate (butylacetate=1)</b>	No data available
<b>Melting Point</b>	773°C
<b>Freezing Point</b>	1424°F
<b>Boiling Point</b>	>815°C (1500°F)
<b>Flash Point</b>	No data available
<b>Self-Ignition temperature</b>	Not flammable
<b>Decomposition temperature</b>	No data available
<b>Flammability (solid, gas)</b>	Not flammable
<b>Vapor Pressure</b>	<0.005 mm Hg @ 20°C
<b>Relative Vapor Density</b>	No data available
<b>Bulk Density</b>	52 - 58 lb/ft <sup>3</sup>
<b>Solubility</b>	Soluble in water.

**SECTION 10. STABILITY AND REACTIVITY**

<b>Reactivity/Chemical Stability</b>	Stable at ambient temperature and under normal conditions of use.
<b>Possibility of Hazardous Reactions</b>	No additional remark.
<b>Conditions to Avoid</b>	Hygroscopic (absorbs moisture from the air). Moisture.
<b>Incompatible Materials</b>	Heat is generated when mixed with water. Spattering and boiling can occur. Sulphuric acid. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromate. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as zinc or sodium.
<b>Hazardous Decomposition Products</b>	Hydrogen chloride gas. Calcium oxide.

**SECTION 11. TOXICOLOGICAL INFORMATION****11.1 Likely Routes of Exposure**

<b>Inhalation</b>	May cause nose and throat irritation. Dust may be irritating to the respiratory tract. Vapors are unlikely due to physical properties.
<b>Eye Contact</b>	Dusts may cause severe irritation with corneal injury. Effect may be slow to heal. When dissolving, the heat produced may cause more intense effects as well as thermal burns.
<b>Skin Contact</b>	When dissolving, the heat produced may cause more intense effects as well as thermal burns. No significant irritation expected from a single short-term exposure. A single exposure is not likely to result in the material being absorbed through the skin in harmful amounts. May cause more severe response if skin is damp. Prolonged or repeated exposure may cause skin irritation, even a burn. May cause more severe response if confined to skin or skin is abraded (scratched or cut).
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation or ulceration. Harmful if large amounts are swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. Single dose oral toxicity is low.

**11.2 Toxicological Effects**

<b>Symptoms</b>	Potassium Chloride: In animals, effects have been reported on the following organs following ingestion: gastrointestinal tract, heart, kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.
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**11.3 Numerical Measures of Toxicity**

<b>Acute Toxicity</b>	The following values are calculated based on chapter 3.1 of the GHS document. ATEmix (oral) 1,009.00 mg/kg ATEmix (dermal) 5,160.00 mg/kg
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**Unknown Acute Toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Calcium Chloride 10043-52-4	= 1000 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	Not available
Potassium Chloride 7447-40-7	= 2600 mg/kg ( Rat )	Not available	Not available
Sodium Chloride 7647-14-5	= 3 g/kg ( Rat )	Not available	> 42 g/m <sup>3</sup> ( Rat ) 1 h
Calcium bromide 7789-1-5	= 4100 mg/kg ( Rat )	Not available	Not available

**11.4 Delayed and immediate effect as well as chronic effects from short and long-term exposure**

<b>Skin Corrosion / Irritation</b>	When dissolving, the heat produced may cause more intense effects as well as thermal burns. No significant irritation expected from a single short-term exposure. A single exposure is not likely to result in the material being absorbed through the skin in harmful amounts. May cause more severe response if confined to skin or skin is abraded (scratched or cut). May cause more severe response if skin is damp. Prolonged or repeated exposure may cause skin irritation, even a burn.
<b>Serious Eye Damage / Irritation</b>	Dusts may cause severe irritation with corneal injury. Effects may be slow to heal. When dissolving, the heat produced may cause more intense effects as well as thermal burns.
<b>Respirator or Skin Sensitization</b>	No Information available.
<b>Germ Cell Mutagenicity</b>	No information available.
<b>Carcinogenicity</b>	No information available.
<b>Reproductive Toxicity</b>	In vitro genetic toxicity studies were negative.
<b>S.T.O.T – Single Exposure</b>	No information available.
<b>S.T.O.T – Repeated Exposure</b>	No information available.
<b>Aspiration Hazard</b>	No Information available.

**SECTION 12. ECOLOGICAL INFORMATION**

Chemical Name	Ecotoxicity - Freshwater Algae	Ecotoxicity - Fish Species Data	Toxicity to microorganisms	Crustacea
Calcium Chloride 10043-52-4	Not available	10650 mg/L LC50 (Lepomis macrochirus) 96 h static	Not available	LC50: 2280000 - 3948000µg/L (48h, Daphnia magna)
Potassium Chloride 7447-40-7	2500 mg/L EC50 Desmodesmus subspicatus 72h	1060 mg/L LC50 (Lepomis macrochirus) 96 h static 750 - 1020 mg/L LC50 (Pimephales promelas) 96 h static	Not available	EC50: =825mg/L (48h, Daphnia magna) EC50: =83mg/L (48h, Daphnia magna)
Sodium Chloride 7647-14-5	Not available	5560 - 6080 mg/L LC50 (Lepomis macrochirus) 96 h flow-through 12946 mg/L LC50 (Lepomis macrochirus) 96 h static 6020 - 7070 mg/L LC50 (Pimephales promelas) 96 h static 7050 mg/L LC50 (Pimephales promelas) 96 h semi-static 6420 - 6700 mg/L LC50 (Pimephales promelas) 96 h static 4747 - 7824 mg/L LC50 (Oncorhynchus mykiss) 96 h flow-through	Not available	EC50: =1000mg/L (48h, Daphnia magna) EC50: 340.7 - 469.2mg/L (48h, Daphnia magna)
Calcium bromide	Not available	Not available	Not available	Not available

**Persistence and degradability** - No information available.

**Bioaccumulation** - No information available.

**Other adverse effects** - No information available.

**SECTION 13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

Do not flush to surface water or sanitary sewer systems. Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Do not reuse empty containers.

**SECTION 14. TRANSPORT INFORMATION**

<b>TDG (Canada):</b>		<b>DOT (U.S.)</b>	
UN Number	Not applicable	UN Number	Not applicable
Shipping name	Not regulated	Shipping name	Not regulated
Class	Not applicable	Class	Not applicable
Packing Group	Not applicable	Packing Group	Not applicable
Marine pollutant	Not available.	Marine pollutant	Not available

**SECTION 15. REGULATORY INFORMATION****15.1 US FEDERAL REGULATIONS**

Chemical Name	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Calcium Chloride - 10043-52-4	Not Listed	Not Listed	Not Listed
Potassium Chloride - 7447-40-7	Not Listed	Not Listed	Not Listed
Sodium Chloride - 7647-14-5	Not Listed	Not Listed	Not Listed
Calcium bromide - 7789-41-5	Not Listed	Not Listed	Not Listed

**15.2 INTERNATIONAL REGULATIONS**

TSCA Complies

DSL/NDSL Complies

**Legend:**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

**SECTION 16. OTHER INFORMATION**

**NFPA Health Hazard** 1 – Exposure could cause irritation but only minor residual injury even if no treatment is given.

**NFPA Fire Hazard** 0 – Materials that will no burn.

**NFPA Reactivity** 0 – Normally stable, even under fire exposure conditions, and are not reactive with water.



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**Prepared by** NSC Minerals Ltd.

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