1. IDENTIFICATION

PRODUCT NAME: LIQUID ICE MELT
CAS #: MIXTURE
PRODUCT USE: ICE MELTING
USES ADVISED AGAINST: DE-ICING OF CONCRETE LESS THAN ONE YEAR OLD
DE-ICING OF METAL SURFACES

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW:

MAJOR HEALTH HAZARDS: CALCIUM CHLORIDE CAUSES EYE AND SKIN IRRITATION. HARMFUL IF SWALLOWED. MAY BE HARMFUL IN CONTACT WITH SKIN
PRECAUTIONARY STATEMENTS: WASH THOROUGHLY AFTER HANDLING

GHS CLASSIFICATION OF MIXTURE:

CONTACT HAZARD - SKIN Category 2 - causes skin irritation
CONTACT HAZARD - EYE Category 2B - Mild Irritant
ACUTE TOXICITY - INHALATION No data available. Not classified
ACUTE TOXICITY - ORAL Category 4 - Harmful if swallowed
ACUTE TOXICITY - DERMAL Category 5 - may be harmful if contact with skin.
CARCINOGENICITY - Not classified as a carcinogen per GHS
Not classified as a carcinogen by NTP, IARC, or OSHA

GHS LABELING PICTOGRAM:

GHS SIGNAL WORD:
WARNING
HAZARD STATEMENT: Non-toxic. No adverse health effects are anticipated with normal use of this product.

PRECAUTIONARY STATEMENT:

EYE CONTACT: Low irritant. Exposure may result in mild irritation. Can cause redness and pain.

INHALATION: Dust may cause irritation to upper respiratory tract (nose and throat)

SKIN CONTACT: Brief contact is essentially non irritating to skin. Prolonged contact to calcium chloride in the product may cause skin irritation, even a burn. Not classified as corrosive to the skin according to DOT guidelines. May cause a more severe response if skin is damp. May cause a more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves)

INGESTION: Low toxicity if swallowed. Small amounts of swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

OTHER HAZARDS: No other hazards known

### 3. COMPOSITION

SUBSTANCE/MIXTURE: Mixture.

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>PERCENTAGE</th>
<th>CAS NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Chloride (in solution)</td>
<td>&gt;90% (23.3% Solution)</td>
<td>007647-14-5</td>
</tr>
<tr>
<td>Calcium Chloride (in solution)</td>
<td>&gt;10% (32% Solution)</td>
<td>010043-52-4</td>
</tr>
<tr>
<td>Proprietary Organic Accelerator</td>
<td>1%</td>
<td>Proprietary</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td>007732-18-5</td>
</tr>
</tbody>
</table>

TECHNOLOGY: Chemical properties of accelerating agents have been withheld as a trade secret.

### 4. FIRST-AID MEASURES

FIRST AID INHALATION: Remove to fresh air. Get medical attention for any breathing difficulty.

FIRST AID SKIN: Wash with soap and water. Obtain medical attention if irritation persists.
FIRST AID EYE: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation occurs, get medical advice/attention.

FIRST AID INGESTION: If swallowed, rinse mouth. Contact a poison control center or doctor/physician if you feel unwell. Never give anything by mouth to an unconscious or convulsive person.

**Most Important Symptoms/Effects (Acute and Delayed): Calcium Chloride**

- **Acute Symptoms/Effects:** Listed below
  - **Inhalation (Breathing):** Inhaling dust may cause irritation to upper respiratory tract (nose and throat)
  - **Skin:** Skin Irritation. Direct abrasion of skin from solid, erythema and burn from reaction with water. Prolonged contact and occlusion may cause more severe symptoms. Damage is localized to contact areas.
  - **Eye:** Eye Irritation. Direct abrasion of cornea from solid, erythema and burn from reaction with water, conjunctival swelling and cornea opacification form hypertonic solution and heat.
  - **Ingestion (Swallowing):** Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.
  - **Delayed Symptoms/Effects:** Chronic exposure to skin and mucous membranes that cause irritation may cause a chronic dermatitis or mucosal membrane problems

**Interaction with other chemicals when enhance Toxicity:** none known

**Medical Conditions Aggravated by Exposure:** Any skin condition that disrupts the skin, such as abrasions, cuts, psoriasis, fungal infections, etc. Any upper respiratory conditions that compromise mucosa can increase local damage from dust contact. Any eye condition that comprises tear production, conjunctiva, or normal corneal homeostasis.

**Protection of First-Aiders:** At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Notes to Physicians:** Due to irritant properties (Calcium Chloride), resulting from heat created as a solid material dissolves in water, swallowing may result in burns/ulceration or mucus membranes. If burn is present, treat it as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
5. FIRE-FIGHTING MEASURES:

FIRE HAZARD: This material does not burn

EXTINGUISHING MEDIA: Use extinguishing agents appropriate for surrounding fire.

FIRE-FIGHTING: Keep unnecessary people away, isolate hazard areas and deny entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Wear protective fire fighting clothing (includes a fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

LOWER FLAMMABILITY LEVEL (air): Not applicable

UPPER FLAMMABILITY LEVEL (air): Not applicable

FLASH POINT: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

6. ACCIDENTAL RELEASE MEASURES:

PERSONAL PRECAUTIONS: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard on some surfaces. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling for additional precautionary measures.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Small and large spills: Contain spilled material if possible. Collect in suitable and properly labeled containers. Flush residue with plenty of water. See section 13, Disposal considerations, for additional information.

ENVIRONMENTAL PRECAUTIONS: Prevent large spills from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information
7. HANDLING AND STORAGE:

PRECAUTIONS FOR SAFE HANDLING: Heat developed during diluting or dissolving of calcium chloride in product is very high. Use cool water when diluting or dissolving (Temperature less than 80°F, 27°C). Avoid contact with eyes, skin and clothing. Do not swallow. Wash thoroughly after handling. See Section 8:

EXPOSURE CONTROLS AND PERSONAL PROTECTION. SAFE STORAGE CONDITIONS: Store in a dry place. Protect from atmospheric moisture. Keep container tightly closed. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

INCOMPATIBILITIES/MATERIALS TO AVOID: (CALCIUM CHLORIDE) Heat is generated by the calcium chloride in product when mixed with water or aqueous acids. Spattering and boiling can occur. Avoid contact with: bromide trifluoride, 2-furan percarboxylic acide because calcium chloride is incompatible with those substances. Contact with zinc forms flammable hydrogen gas, which can be explosive. Catalyzes exothermic polymerization of methyl vinyl ether. Attaches metals in the presence of moisture, and may release flammable hydrogen gas. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromates.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Calcium Chloride):

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>OSHA Final PEL TWA</th>
<th>OSHA FINAL PEL STEL</th>
<th>OSHA FINAL PEL CEILING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulates Not Otherwise Regulated</td>
<td>Not Assigned</td>
<td>TWA 15mg/m3 (total)</td>
<td>TWA 5mg/m3 (resp)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

OEL: Occupational Exposure Level; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Level; TWA: Time Weighted Average; STEL: Short Term Exposure Level

Non-Regulatory Exposure Limit(s):
- The Non-Regulatory United States Occupational Safety and Health Association (OSHA) limits shown in the table are the Vacated 1989 PEL’s (vacated by 58 FR 35338, June 30, 1993).
- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended
occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS NUMBER</th>
<th>ACGIH TWA</th>
<th>ACGIH STEL</th>
<th>OSHA TWA (VACATED)</th>
<th>OSHA STEL (VACATED)</th>
<th>OSHA CEILING (VACATED)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulates Not Otherwise Specified (PNOS)</td>
<td>Not Assigned</td>
<td>TWA 10 mg/m3</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 3 mg/m3 (resp)</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
</tbody>
</table>

**Additional Advice:** Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**ENGINEERING CONTROLS:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**PERSONAL PROTECTIVE EQUIPMENT:**

**EYE PROTECTION:** Wear safety glasses with side-shields. For dusty operations or when handling solutions of the material, wear chemical goggles.

**SKIN AND BODY PROTECTION:** Wear clean, body-covering clothing.

**HAND PROTECTION:** Use gloves chemically resistant to this material. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Neoprene, Polyvinyl chloride ("PVC" or "vinyl"), Nitrile/butadiene rubber ("nitrile" or "NBR"). 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.

**RESPIRATORY PROTECTION:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: High efficiency particulate air
(HEPA) N95. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES:

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL STATE / COLOR:</td>
<td>Light Blue Colored Liquid</td>
</tr>
<tr>
<td>ODOR:</td>
<td>Mild</td>
</tr>
<tr>
<td>MELTING POINT/RANGE:</td>
<td>N/A</td>
</tr>
<tr>
<td>BOILING POINT:</td>
<td>N/A</td>
</tr>
<tr>
<td>VAPOR PRESSURE:</td>
<td>N/A</td>
</tr>
<tr>
<td>VAPOR DENSITY (air=1):</td>
<td>N/A</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY (water=1):</td>
<td>-1.17</td>
</tr>
<tr>
<td>WATER SOLUBILITY:</td>
<td>Readily soluble pH (5% SOLV/WATER): 6 to 8 (Neutral)</td>
</tr>
<tr>
<td>FLASH POINT:</td>
<td>N/A</td>
</tr>
<tr>
<td>LOWER FLAMMABILITY LEVEL (air):</td>
<td>N/A</td>
</tr>
<tr>
<td>UPPER FLAMMABILITY LEVEL (air):</td>
<td>N/A</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTIVITY / STABILITY:</td>
<td>Stable</td>
</tr>
<tr>
<td>CONDITIONS TO AVOID:</td>
<td>Reactive with oxidizing agents, acids, lithium, bromine, trifluorides.</td>
</tr>
<tr>
<td>HAZARDOUS DECOMPOSITION PRODUCTS:</td>
<td>Does not decompose.</td>
</tr>
<tr>
<td>HAZARDOUS POLYMERIZATION:</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>CORROSIVE TO METAL:</td>
<td>May be corrosive with: Brass, ferrous metals, mild steel.</td>
</tr>
<tr>
<td>OXIDIZER:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION:

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: For solid: May cause slight eye irritation, mechanical injury only. Dust formation should be avoided, as dust can cause severe eye irritation with corneal injury.
SKIN CONTACT: Brief contact is essentially nonirritating to skin. Prolonged contact may cause skin irritation, even a burn. Not classified as corrosive to the skin according to DOT guidelines. May cause more severe response if skin is damp, abraded (scratched or cut), or covered by clothing, gloves or footwear.

INHALATION: Dust may cause irritation to upper respirator tract (nose and throat).

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause local mucosal damage to esophagus and stomach. Swallowing may result in gastrointestinal irritation or ulceration.

CHRONIC EFFECTS: Chronic exposures to CALCIUM CHLORIDE that cause irritation may cause chronic dermatitis or mucosal membrane problem. For the minor component(s): SODIUM CHLORIDE: Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE: (CALCIUM CHLORIDE) Solution and or solids may be visible on the skin and or eyes. Localized redness, warmth, and irritation consistent with mechanism of injury: abrasion, burn, hypertonic solution.

INHALATION (BREATHING): Inhaling dust may cause irritation to upper respiratory tract (nose and throat).

SKIN: Skin irritation. Direct abrasion of skin from solid, erythema and burn from reaction with water. Prolonged contact and occlusion may cause more severe symptoms. Damage is localized to contact areas.

EYE: Eye irritation. Direct abrasion of cornea from solid, erythema and burn from reaction with water, conjunctival swelling and cornea opacification from hypertonic solution and heat.

INGESTION (SWALLOWING): Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.

INTERACTION WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY: None known.

GHS HEALTH HAZARDS:

GHS: ACUTE TOXICITY – ORAL: Category 4 – Harmful if swallowed.
GHS: ACUTE TOXICITY – DERMAL: Category 5 – May be harmful in contact with skin.
12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested)

Freshwater Fish Toxicity: Calcium Chloride: LC50, bluegill (Lepomis macrochirus): 8,350 - 10,650 mg/l Sodium Chloride: LC50, fathead minnow (Pimephales promelas): 10,610 mg/l

Invertebrate Toxicity: Calcium Chloride: LC50, water flea Daphnia magna: 759 - 3,005 mg/l Sodium Chloride: LC50, water flea Daphnia magna: 4,571 mg/l Microorganism Toxicity: Sodium Chloride: IC50, OECD 209 Test; activated sludge, respiration inhibition: > 1,000 mg/l

FATE AND TRANSPORT:

BIODEGRADATION: Biodegradation is not applicable.

BIOCONCENTRATION: No bioconcentration is expected because of the relatively high water solubility. Potential for mobility in soil is very high (Koc between 0 and 50). Partitioning from water to n-octanol is not applicable.

13. DISPOSAL CONSIDERATIONS: (See Section 14 for Regulatory Information)

Reuse or recycle if possible. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Report spills if applicable. Waste characterizations and compliance with applicable
laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill and waste water treatment system.

14. TRANSPORT INFORMATION:

UNITED STATES DOT INFORMATION: This product is not regulated by D.O.T. when shipped domestically by land.

CANADIAN TDG INFORMATION: This product is not regulated by T.D.G. when shipped domestically by land.

15. REGULATORY INFORMATION (Not meant to be all-inclusive-selected regulations represented)

D.O.T. PROPER SHIPPING NAME: N/A
HAZARDOUS SUBSTANCE 49CFR CERCLA: N/A
D.O.T. HAZARD CLASS N/A
D.O.T. LABELS REQUIRED N/A
D.O.T. PLACARDS REQUIRED N/A

U.S. REGULATIONS

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200) (US)
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated
EPCRA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated
EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.21): Acute Health Hazard
EPCRA SECTION 313 (40 CFR 372.65): To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.
OSHA PROCESS SAFETY (PSM) (29 CFR 372.65): Not regulated

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: TOXIC SUBSTANCE CONTROL ACT (TSCA): All components are listed or exempt
TSCA 12(b): This product is not subject to export notification
CANADIAN CHEMICAL INVENTORY: All components are listed
STATE REGULATIONS

CALIFORNIA PROPOSITION 65: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute. WARNING: This product (when used in aqueous formulations with a chemical oxidizer such as ozone) may react to form calcium bromate, a chemical known to the State of California to cause cancer.

CANADIAN REGULATIONS This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D2B – eye or skin irritant (See sections 4 & 5) Refer to employer’s workplace education program.

16. OTHER INFORMATION

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

HEALTH RATING: 2 FLAMMABILITY RATING: 0 REACTIVE RATING: 0

NFPA 704 – HAZARD IDENTIFICATION RATINGS (SCALE 0-4)

HEALTH RATING: 1 FLAMMABILITY RATING: 0 REACTIVE RATING: 0

ADDITIONAL HEALTH DATA COMMENT:

This Safety Data Sheet contains environmental, health and toxicological information for your employees. Please make sure this information is given to them. It also contains information to help you meet community right-to-know / emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this SDS must be given to the buyer or the information incorporated in your SDS. Discard any previous edition of this SDS.

IMPORTANT:

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in the Safety Data Sheet available to your employees.