

DOWFLAKE™ Xtra 83-87% Calcium Chloride

SECTION 1. IDENTIFICATION

Product Identifier DOWFLAKE™ Xtra 83-87% Calcium Chloride
Product Family KING Home Improvement Products - Ice Melting & Traction Products
Recommended Use DOWFLAKE™ Xtra 83-87% Calcium Chloride possesses distinctive properties that make it the ideal choice for ice melting, dust control, concrete acceleration and many other applications.
Manufacturer King Packaged Materials Company, 555 Michigan Drive, Suite 100, Oakville, Ontario, L6L 0G4, www.kpmindustries.com
Emergency Phone No. Chemtrec, (800) 424-9300, 24 hours/7 days a week
 King Packaged Materials Company, (800) 461-0566, 8:30am-4:30pm
SDS No. 0477

SECTION 2. HAZARD IDENTIFICATION

Classification

Acute toxicity (Oral) - Category 4; Skin irritation - Category 2; Eye irritation - Category 2A



Other Hazards

Unknown Acute Toxicity: A percentage of this product consists of ingredient(s) of unknown acute toxicity.
 Unknown Acute Dermal Toxicity:
 3% of this product consists of ingredient(s) of unknown acute dermal toxicity.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Calcium chloride	10043-52-4	>83-<87		
Water	7732-18-5	>8-<14		
Potassium chloride	7447-40-7	>2-<3		
Sodium chloride	7647-14-5	>1 -<2		

Notes

Potassium chloride and sodium chloride are impurities from the naturally-occurring source material, brine solution.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

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Remove source of exposure or move to fresh air. Call a Poison Centre or doctor if you feel unwell.

Skin Contact

Remove contaminated clothing and wash before reuse. Wash skin with soap and water. Get medical attention if irritation develops.

Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion

Rinse mouth with water. Get medical advice or attention if you feel unwell or are concerned.

Most Important Symptoms and Effects, Acute and Delayed

Inhalation (Breathing): Inhaling dust may cause irritation to upper respiratory tract (nose and throat). Nasal mucosal and oropharyngeal erythema.

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. Corneal eye pain, redness, acute corneal thickening or whitening.

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

Delayed Symptoms/Effects:

- Chronic exposures to skin and mucus membranes that cause irritation may cause a chronic dermatitis or mucosal membrane problem interaction with Other Chemicals which 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 compromises 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.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing media appropriate for surrounding fire.

Specific Hazards Arising from the Product

Does not burn.

Special Protective Equipment and Precautions for Fire-fighters

Keep unnecessary people away, isolate hazard area 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 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. If this is not available, wear full chemical resistant 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

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.

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Environmental Precautions

Prevent large spills from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

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.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Heat developed during diluting or dissolving 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 for additional information.

Conditions for Safe Storage

Store in a dry place. Protect from atmospheric moisture. Keep container tightly closed. Keep separated from incompatible substances (see Section 10).

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate 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.

Individual Protection Measures

Eye/Face Protection

Not required but it is good practice to wear safety glasses or chemical safety goggles.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Milky white fibres.
Odour	Odourless
Odour Threshold	Not available
Melting Point/Freezing Point	>= 772 °C (1422 °F) (melting); Not applicable (freezing)
Initial Boiling Point/Range	Not applicable
Flash Point	Not applicable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not applicable
Vapour Pressure	Does not form a vapour.
Vapour Density (air = 1)	Not applicable
Solubility	Soluble in water

Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Not applicable
Viscosity	Not applicable (kinematic); Not applicable (dynamic)
Other Information	
Physical State	Solid
Molecular Formula	CaCl ₂
Bulk Density	51 - 61 lb/ft ³ (817 - 977 kg/m ³)

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Hygroscopic. Liberates large amounts of heat when dissolving in water or aqueous acids.

Chemical Stability

Stable under normal handling and storage conditions.

Possibility of Hazardous Reactions

Reacts violently in the presence of water.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources.

Incompatible Materials

Heat is generated when mixed with water or aqueous acids. When exposed to water, spattering and boiling can occur. Avoid contact with: bromide trifluoride, 2-furan percarboxylic acid 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. Attacks 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.

Hazardous Decomposition Products

Formed under fire conditions: hydrogen chloride gas, calcium oxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

1126 mg/kg - Oral Acute Toxicity Estimate (ATE)

2637 mg/kg - Dermal Acute Toxicity Estimate (ATE)

Skin Corrosion/Irritation

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.

Serious Eye Damage/Irritation

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.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

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

Skin Absorption

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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.

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.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Chronic exposures to calcium chloride that cause irritation may cause a chronic dermatitis or mucosal membrane problem.

For the minor component(s):

POTASSIUM CHLORIDE: In animals, effects have been reported on the following organs after ingestion:

Gastrointestinal tract, heart, and kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

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.

Reproductive Toxicity

Development of Offspring

Does not cause harm to the unborn child.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Calcium chloride

Freshwater Fish

LC50, bluegill

(Lepomis macrochirus): 8350 -10650 mg/l

Invertebrate Toxicity:

LC50, water flea

Daphnia magna: 759- 3005 mg/l

Algae Toxicity:

- No data available

Other Toxicity:

- No data available Potassium Chloride

Freshwater Fish

- LC50, rainbow trout

(Oncorhynchus mykiss),

96 h: 4,236 mg/l

Invertebrate Toxicity:

EC50, water flea Daphnia magna,

24 h, immobilization:590 mg/l

- LC50, water flea

Ceriodaphnia dubia,

96 h: 3,470 mg/l

Algae Toxicity:

- No data available

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Other Toxicity:

- No data available Sodium Chloride

Freshwater Fish

- LC50, fathead minnow
(Pimephales promelas):
10,610 mg/l

Invertebrate Toxicity:

LC50, water flea Daphnia magna,
4,571 mg/l

Algae Toxicity:

- IC50, OECD 209
Test; activated sludge,
respiration inhibition: > 1,000 mg/l

Other Toxicity:

- IC50, OECD 209
Test; activated sludge,
respiration inhibition: > 1,000 mg/l.

Persistence and Degradability

Calcium chloride is believed not to persist in the environment because it is readily dissociated into calcium and chloride ions in water. Calcium chloride released into the environment is thus likely to be distributed into water in the form of calcium and chloride ions. Calcium ions may remain in soil by binding to soil particulate or by forming stable salts with other ions. Chloride ions are mobile and eventually drain into surface water. Both ions originally exist in nature, and their concentrations in surface water will depend on various factors, such as geological parameters, weathering, and human activities.

Bioaccumulative Potential

Calcium chloride and its dissociated forms (calcium and chloride ions) are ubiquitous in the environment. Calcium and chloride ions can also be found as constituents in organisms. Considering its dissociation properties, calcium chloride is not expected to accumulate in living organisms.

Mobility in Soil

Calcium chloride is not expected to be absorbed in soil due to its dissociation properties and high water solubility. It is expected to dissociate into calcium and chloride free ions or it may form stable inorganic or organic salts with other counter ions, leading to different fates between calcium and chloride ions in soil and water components. Calcium ions may bind to soil particulate or may form stable inorganic salts with sulfate and carbonate ions. The chloride ion is mobile in soil and eventually drains into surface water because it is readily dissolved in water.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Reuse or reprocess, 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 OR MANUFACTURING PROCESSES 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. Container Management: Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

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Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

USA

Toxic Substances Control Act (TSCA) Section 8(b)

TSCA 12(b): This product is not subject to export notification.

Additional USA Regulatory Lists

U.S. REGULATIONS

OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

Not regulated.

SARA EHS Chemical (40 CFR 355.30)

Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

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 1910.119):

Not regulated NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS:

Toxic Substance Control Act (TSCA): All components are listed or exempt.

Custom Regulatory 1

STATE REGULATIONS

California Proposition 65:

This product is not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.

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.

SECTION 16. OTHER INFORMATION

NFPA Rating Health - 3

SDS Prepared By King Packaged Materials Company

Phone No. 450-430-4104

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Additional Information The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge.

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