10% through 20 (0.84 mm) sieve
80% through 8 (2.38 mm) sieve
100% through 4 (4.76 mm) sieve

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressures.

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

Possibility of Hazardous Reactions: Avoid moisture.

Conditions to Avoid (e.g., static discharge, shock, or vibration): None known.

Incompatible Substances: Heat is generated when mixed with water or aqueous acids. 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.

Hazardous Polymerization: Polymerization will not normally occur; however, violent polymerization occurs when mixed with Methyl Vinyl Ether.

SECTION 11. TOXICOLOGICAL INFORMATION

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POTENTIAL HEALTH EFFECTS:

ACUTE TOXICITY:

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 respiratory 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 TOXICITY:

Chronic Effects: 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.

SIGNS AND SYMPTOMS OF EXPOSURE:

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). No reliable animal data on acute inhalation toxicity are available; however, human data suggest that calcium chloride is not acutely toxic by inhalation.

Skin: Direct contact with abraded skin may cause erythema and burns. 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. Symptoms of oral toxicity are not expected to be observed at lower levels (200 – 400 mg/kg). However, at the higher levels (800 – 1600 mg/kg), in male rat studies, there was some indication of gastric irritation, characterized by thickened and ulcerated areas within the stomach.

Interaction with Other Chemicals Which Enhance Toxicity: Because of its additive effect, calcium should be administered very cautiously to a patient who is digitalized or who is taking effective doses of digitalis or digitalis-like preparations.

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GHS HEALTH HAZARDS:

GHS: CONTACT HAZARD - EYE: Category 2A - Causes serious eye irritation
GHS: ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed

TOXICITY DATA:

PRODUCT TOXICITY DATA:

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
1055 mg/kg - Oral Acute Toxicity Estimate (ATE)	2776 mg/kg - Dermal Acute Toxicity Estimate (ATE)	No data is available

COMPONENT TOXICITY DATA:
The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	Oral LD50	Dermal LD50	Inhalation LC50
Calcium chloride	1000 mg/kg (Rat)	>5000 mg/kg (Rabbit)	
Potassium Chloride	2600 mg/kg (Rat)	No data available	
Sodium Chloride	3 g/kg (Rat)	>10000 mg/kg (Rabbit)	>42 mg/L (1-h Rat)

Eye Irritation/Corrosion: May cause sufficient injury to the eye to include damage to the cornea which heals or nearly heals in a week and/or considerable conjunctival irritation with edema.

Standard Draize (Skin): Score - 1.4 (Rabbit - 24 hours)

Skin Irritation/Corrosion: Calcium chloride was found not to be irritating to rabbit skin in a GLP-compliant study, performed according to OECD Guideline 404 (Koopman et al., 1986e). No effects were noted in any of three rabbits at any observation time points (1, 24, 48 and 72 hours) following an application of the anhydrous substance under occlusive dressing for 4 hours.

Skin Absorbent / Dermal Route: NO
Calcium chloride lacks the necessary lipophilicity that is required to allow penetration of the substance through the stratum corneum.

RESPIRATORY OR SKIN SENSITIZATION: Calcium chloride is not sensitizing to skin or respiratory tract. No evidence of skin or respiratory sensitization in humans have been reported despite long-term historical and wide dispersive use.

CARCINOGENICITY: Calcium chloride is not genotoxic in- vitro with calcium and chloride being essential nutrients for humans. In addition, the safe use of calcium chloride as a food additive was recently re-evaluated by the EFSA Panel on Food Additives and Flavorings (Scientific opinion dated 6 June 2019, doi: 10.2903/j.efsa.2019.5751). The assessment confirmed that there is no concern with respect to carcinogenicity. Based on this information, it is concluded that the substance is not carcinogenic and the performance of a carcinogenicity study for calcium chloride is not indicated. Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure): There is limited evidence that calcium chloride may cause respiratory tract irritation; however, this evidence is concluded to not be sufficient for classification and labelling.

SPECIFIC TARGET ORGAN TOXICITY (Repeated or Prolonged Exposure): Calcium and chloride are essential nutrients for humans and with a known tolerable upper intake level for calcium set at 2500 mg per day, this equates to a tolerable level of approximately 6.9 g $CaCl_2$ per day. Therefore, repeat exposure target organ toxicity is not expected in an occupational exposure setting.

INHALATION HAZARD: No reliable animal data on acute inhalation toxicity are available; however, human data suggest that calcium chloride is not acutely toxic by inhalation.

GERM CELL/IN-VITRO MUTAGENICITY: Calcium chloride is considered not to have a genotoxic potential based on the results of two bacterial mutation assays and an in-vitro chromosome aberration test in Chinese hamster lung fibroblasts.

REPRODUCTIVE TOXICITY: An oral developmental study was performed in three (3) species (mouse, rat, and rabbit). In all three species no maternal or teratogenic effects were noted, and NOAELs (169mg/kg bw/day) were above the highest dose given. In addition, calcium chloride will neither reach the fetus or male and female reproductive organs, as it does not become systemically available, which indicates that there is no risk for developmental or reproductive toxicity.

TOXICOKINETICS: Calcium chloride is easily dissociated into calcium and chloride ions in water. The absorption, the distribution, and the excretion of the ions in animals are regulated separately. Calcium and chloride are essential constituents of the body of all animal species. Calcium is essential for the formation of skeletons and the regulation of neural transmission, muscle contraction and coagulation of the blood. Chloride is required for regulating intracellular osmotic pressure and buffering.

METABOLISM: Not considered relevant in view of the nutritional aspects and mechanisms of action of calcium and chloride ions.

ENDOCRINE DISRUPTOR: Potassium chloride is listed on The Endocrine Disruptors Exchange's (TEDX) List of Potential Endocrine Disruptors database of chemicals with the potential to affect the endocrine system. Every chemical on the TEDX List has one or more verified citations published, accessible, primary scientific research demonstrating effects on the endocrine system. Potassium chloride, sodium chloride, and calcium bromide are impurities from the naturally occurring source material, brine solution.

NEUROTOXICITY: No relevant information available.

IMMUNOTOXICITY: No relevant information available; however, calcium ions are essential in the correct gene expression of the immune system.

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY (EC, IC, and LC):

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).

Fish Toxicity:
Fathead Minnow (Pimephales promelas) LC50 (96-hour) > 4630 mg/L
Bluegill Sunfish (Lepomis macrochirus) /Mosquitofish (Gambusia affinis) LC50 (96-hour) > 9500 - 13400 mg/L

Invertebrate Toxicity:
Daphnia magna EC50 (48 hour) = 2400 mg/L
Daphnia magna NOEC (21 days) = 230 mg/L

FATE AND TRANSPORT:

PERSISTENCE: 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.

BIODEGRADATION: Calcium chloride is an inorganic substance which is not expected to undergo photolysis or biodegradation.

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.

BIOACCUMULATIVE POTENTIAL: Calcium chloride is easily dissociated into calcium and chloride ions and both ions are essential constituents of the body of all animals hence if a high amount would be taken up this is regulated by the body. Bioaccumulation of calcium chloride is consequently not expected.

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.

ADDITIONAL ECOLOGICAL INFORMATION: No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:
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.

Contaminated Material:
Contaminated packaging should be disposed of as unused product. Recycle any unused portion of the material for its approved use. Waste calcium chloride must never be discharged directly into sewers or surface waters.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:
Status: Not Regulated
CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
Status: Not Regulated

MARITIME TRANSPORT (IMO / IMDG)

Status - IMO / IMDG: Not Regulated.

AIR TRANSPORT (ICAO / IATA)

Special Instructions CAO: IATA Certificate for shipping personnel is required

SECTION 15. REGULATORY INFORMATION

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

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):
Health Hazard - Acute Toxin (any route of exposure)
Health Hazard - Serious eye damage or eye irritation

EPCRA SECTION 313 (40 CFR 372.65):
To the best of our knowledge, this product does not contain chemicals at levels that require reporting under this statute.

DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):
No components in this material are regulated under DHS

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
Not regulated.

EPA'S CLEAN WATER AND CLEAN AIR ACTS:
Component(s) not listed on impacted regulatory lists.

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):

Component	TSCA Inventory	TSCA ACTIVE LIST	TSCA 12(b)	TSCA/Section 4	TSCA/Section 5	TSCA/Section 6	TSCA/Section 8
Calcium chloride 10043-52-4 (> 94 - < 97 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Potassium Chloride 7447-40-7 (> 2 - < 3 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed
Sodium Chloride	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not listed	Not listed

7647-14-5 (> 1 - < 2 %)							

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

Component	DSL	NDSL
Calcium chloride 10043-52-4 (> 94 - < 97)	Listed	Not Listed
Potassium Chloride 7447-40-7 (> 2 - < 3)	Listed	Not Listed
Sodium Chloride 7647-14-5 (> 1 - < 2)	Listed	Not Listed

STATE REGULATIONS

California Proposition 65:
This product is not listed on the California Governor's current list of Carcinogens, Reproductive Toxicants, and/or Candidate Carcinogens (Proposition 65), but it may contain trace amounts of impurities that are listed. For additional information, contact Panther Industries Inc. Customer Service (1-800-752-5151 or 1-972-404-3700). WARNING: This product (when used in aqueous formulations with a chemical oxidizer such as ozone) may react to form bromate, a chemical known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	Rhode Island Right to Know Hazardous Substance List
Calcium chloride 10043-52-4 (> 94 - < 97 %)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Potassium Chloride 7447-40-7 (> 2 - < 3 %)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride 7647-14-5 (> 1 - < 2 %)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Workplace Hazardous Materials Information System (WHMIS 2015) which includes the amended Hazardous Products Act (HPA) and the Hazardous Product Regulations (HPR).

Component	Canada - CEPA - Schedule I - List of Toxic Substances	Canada - NPRI	Canada - CEPA - 2010 Greenhouse Gases (GHG) Subject to Mandatory Reporting	Canadian Chemical Inventory:	NDSL:
Calcium chloride 10043-52-4 (> 94 - < 97)	Not listed	Not Listed	Not Listed	Listed	Not Listed
Potassium Chloride 7447-40-7 (> 2 - < 3)	Not listed	Not Listed	Not Listed	Listed	Not Listed
Sodium Chloride 7647-14-5 (> 1 - < 2)	Not listed	Not Listed	Not Listed	Listed	Not Listed

SECTION 16. OTHER INFORMATION

ANHYDROUS CALCIUM CHLORIDE 94 - 97% MINI-PELLETS

SDS No.: M48022 **Rev. Date:** 15-Feb-2023
Supersedes Date: 2016-03-August

Prepared by: Panther Industries Inc. - HES&S Product Stewardship Department

Rev. Date: 15-Feb-2023

Disclaimer:
We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

Reason for Revision:
• Change of company physical address: SEE SECTION 1
• Updated 24 Hour Emergency Telephone Number: SEE SECTION 1
• Updated Uses Advised Against information: SEE SECTION 1
• Added restrictions on use: See SECTION 1
• Modified the Emergency Overview information: SEE SECTION 2
• Changed GHS Classification: SEE SECTION 2
• Modified GHS Hazard and Precautionary Statements: SEE SECTION 2
• Added or revised Physical Hazards: SEE SECTION 2
• Updated First Aid Measures: SEE SECTION 4
• Modified Fire Fighting Measure Recommendations: SEE SECTION 5
• Revised Accidental Release Measures: SEE SECTION 6
• Revised Handling and Storage Recommendations: SEE SECTION 7
• Added Hygiene Measures SEE SECTION 8
• Revised Exposure Controls/Personal Protection information: SEE SECTION 8
• Stability and Reactivity recommendations: SEE SECTION 10
• Toxicological Information has been revised: SEE SECTION 11
• Ecological Information has been modified: SEE SECTION 12
• Updated Disposal Considerations. SEE SECTION 13
• Added air transport certificate requirements for shipping personnel: SEE SECTION 14
• Revised California Proposition 65 Statement: SEE SECTION 15
• Added SARA Hazard Categories Aligned with GHS (2018): SEE SECTION 15
• Added LOLI tables such as EPA'S Clean Water / Air Act, TSCA status, DHS, PSM, EPCRA, CERCLA, Federal Canadian: SEE SECTION 15
• Updated Canadian Regulatory information: SEE SECTION 15
• Modified statement on Canadian classification rule. SEE SECTION 15
• A component has been added to the formulation. SEE SECTION 3

IMPORTANT:
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ANHYDROUS CALCIUM CHLORIDE 94 - 97% MINI-PELLETS

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 this Safety Data Sheet available to your employees.

End of Safety Data Sheet