SAFETY DATA SHEET

LIQUIDOW® FOOD GRADE CALCIUM CHLORIDE

North America EN
SDS No.: M48010

Rev. Date: 11-Nov-2025
Rev. Num. 07

SECTION 1. CHEMICAL PRODUCT / COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 14555 Dallas Parkway, Suite 400 Dallas, Texas 75254-4300
24-Hour Emergency Telephone Number:	1-800-733-3665 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	**LIQUIDOW® FOOD GRADE CALCIUM CHLORIDE**
Synonyms:	Calcium Dichloride; Calcium Chloride Aqueous Solution; Liquid Calcium Chloride; Calcium Chloride
Product Use:	Food Additive, Food processing
Uses Advised Against:	- Not approved for potable water treatment
Other Global Restrictions on Use:	Other restrictions on use based on local, regional, state, or national regulations may exist and must be determined on a case-by-case basis.
Chemical Family:	Inorganic Salt
Additional Information:	LIQUIDOW® Food Grade is a purified calcium chloride solution intended for direct addition to food products. This product is manufactured to meet the Food Chemicals Codex (FCC) monograph for calcium chloride solutions and comply with the U.S. Food and Drug Administration's (FDA) current Good Manufacturing Practice (cGMP) requirements. This product is Kosher certified and Halal compliant. LIQUIDOW® Food Grade is Generally Recognized as Safe for certain uses in human foods (21 CFR 184.1193). This product is also USDA-approved for certain uses in the production of meat and poultry products (9 CFR 424.21(c)) and

may also be used in pre-harvest foliar crop sprays as a calcium supplement.

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: Health hazard classifications were performed using OSHA Hazard Communication 2024 (1910.1200) Appendix A and/or UN GHS Rev. 9 (2021). This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

HEALTH CANADA HPR REGULATORY STATUS: This material is considered hazardous by the Health Canada Hazardous Products Act's Hazardous Products Regulations (HPR) (SOR/2015-17).

EMERGENCY OVERVIEW:

Color: Clear
Physical State: Liquid
Appearance: Clear liquid
Odor: Odorless

Signal Word: **WARNING**

MAJOR HEALTH HAZARDS: CAUSES SERIOUS EYE IRRITATION. MAY BE HARMFUL IF SWALLOWED.

PHYSICAL HAZARDS: Calcium chloride brines are electrically conductive. There is a risk of electric shock if energized electrical equipment is handled with hands or fabric gloves that are wet with brine. Chlorides in the presence of water and oxygen are associated with the accelerated corrosion of common metals, such as steel, copper and brass.

PRECAUTIONARY STATEMENTS: Wash hands and exposed skin thoroughly after handling. Do not touch eyes. Wear eye and face protection.

ADDITIONAL HAZARD INFORMATION: Good hygiene practices include but are not limited to wearing chemical resistant gloves and eye protection; washing hands and affected skin immediately after handling, before breaks, and at the end of the workday; regularly cleaning work area and clothing; etc.

HAZARD CLASSIFICATION:

GHS: CONTACT HAZARD - EYE:	Category 2A - Causes serious eye irritation
HAZARDS NOT OTHERWISE CLASSIFIED (HNOC):	- ACUTE TOXICITY - ORAL: Category 5 (May be harmful if swallowed)

UNKNOWN ACUTE TOXICITY:

Unknown Acute Oral Toxicity:
100% of this product consists of ingredient(s) of known acute oral toxicity.

Unknown Acute Dermal Toxicity:
100% of this product consists of ingredient(s) of known acute dermal toxicity.

Unknown Acute Inhalation Toxicity:
There is no acute inhalation toxicity data available for this material.

GHS SYMBOL: Exclamation mark



GHS SIGNAL WORD: **WARNING**

GHS HAZARD STATEMENTS:

GHS - Physical Hazard Statement(s)
• No GHS physical hazard categories were identified for this product

GHS - Health Hazard Statement(s)
• Causes serious eye irritation

GHS - Environmental Hazard Statement(s)
• No GHS environmental hazards were identified for this product

GHS - Precautionary Statement(s) - Prevention
• Wash hands and exposed skin thoroughly after handling. Do not touch eyes
• Wear eye and face protection

GHS - Precautionary Statement(s) - Response
• 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 help

GHS - Precautionary Statement(s) - Storage
• There are no Precautionary-Storage phrases assigned

GHS - Precautionary Statement(s) - Disposal
• Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

Physical Hazards of Significance Not Mentioned in GHS Classification
• Calcium chloride brines are electrically conductive. There is a risk of electric shock if energized electrical equipment is handled with hands or fabric gloves that are wet with brine
• Chlorides in the presence of water and oxygen are associated with the accelerated corrosion of common metals, such as steel, copper and brass

Health Hazards of Significance Not Mentioned in GHS Classification
• ACUTE TOXICITY - ORAL: Category 5 (May be harmful if swallowed)

Persistent, Bioaccumulative, and Toxic (PBT) and Very Persistent and Very Bioaccumulative (vPvB) Assessment:
According to Annex XIII of the REACH Regulation 1907/2006/EC inorganic substances do not need to be subjected to a PBT assessment.

Endocrine Disruptor Assessment:
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.

Component	Endocrine Screening List	EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation
Sodium Chloride	Not listed	Not Listed as SVHC

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Systematic Chemical Name	Common name	CAS Number	Percent [%]
Water 7732-18-5	Dihydrogen monoxide (H_2O)	Water	7732-18-5	65-66
Calcium chloride 10043-52-4	Calcium Chloride	Calcium Chloride	10043-52-4	32-33
Potassium Chloride 7447-40-7	Potassium Chloride	Potassium Chloride	7447-40-7	<1
Sodium Chloride 7647-14-5	Sodium Chloride (NaCl)	Sodium Chloride (Salt)	7647-14-5	<1
Calcium bromide 7789-41-5	Calcium Bromatum	Calcium Bromide	7789-41-5	<0.4

Notes: *Potassium chloride, sodium chloride, and calcium bromide are impurities from the naturally occurring source material, brine solution.*

SECTION 4. FIRST AID MEASURES

EYE CONTACT: 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 help.

SKIN CONTACT: If on skin, wash with plenty of water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical help.

INHALATION: If inhalation of dust occurs and adverse effects result, remove to uncontaminated area. IF INHALED: Get medical help if you feel unwell.

INGESTION: IF SWALLOWED: Get medical help. If swallowed, rinse mouth.

MOST IMPORTANT SYMPTOMS/EFFECTS (ACUTE AND CHRONIC [DELAYED]):

Acute Symptoms/Effects:

Eye: Eye Irritation. May cause serious eye irritation. May cause eye burns. May cause watering, redness, and irritation to the eye lids, conjunctiva, and cornea.
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.
Inhalation (Breathing): Inhaling this material 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.
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.

Chronic (Delayed) Symptoms/Effects: Chronic exposures to skin and mucus membranes that cause irritation may cause a chronic dermatitis or mucosal membrane problem.

Protection of First-Aid Responders: 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 Physician: Due to irritant properties, resulting from heat created as solid material dissolves in water, swallowing may result in burns/ulceration of mucus membranes. If burn is present, treat 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.

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.

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.

SECTION 5. FIRE FIGHTING MEASURES

Fire Hazard: This material does not burn.

Explosive properties: Prolonged action of calcium chloride solution upon the zinc coating of a galvanized iron vessel causes slow evolution of hydrogen, which may ignite and explode. The exotherm produced by adding solid calcium chloride to hot water causes violent boiling. Calcium chloride catalyzes exothermic polymerization of methyl vinyl ether.

Extinguishing Media: Use water, dry chemical, carbon dioxide or foam to extinguish. Do not extinguish fire unless release can be stopped. Use water to cool containers but avoid getting water into containers.

Unsuitable Extinguishing Media: No information available.

Specific Hazards: When heated to decomposition, calcium chloride releases toxic and corrosive gases, including hydrogen chloride, chlorine, and calcium oxide. Avoid direct contact of this product with hot water as this can cause an exothermic reaction.

Unusual Hazards: As calcium chloride concentration increases, so does the crystallization temperature (freeze point) of the solution. For example, a 32% calcium chloride solution freezes at -17°F (-27°C), while a 42% calcium chloride solution freezes at 69°F (21°C). Therefore, depending on calcium chloride concentration, partial crystallization may take place in cold weather conditions. Freezing points are provided in the Calcium Chloride Handbook provided from OxyChem Technical Service or Customer Service or available at https://www.oxycalciumchloride.com/siteassets/documents/guides/calcium-chloride-handbook.pdf.

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 firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting 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.

Hazardous Combustion Products: Formed under fire conditions: hydrogen chloride gas, calcium oxide

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not applicable

Upper Flammability Level (air): Not applicable

Flash point: Not applicable

Auto-ignition Temperature: Not applicable

Physical Hazards of Significance Not Mentioned in GHS Classification
• Calcium chloride brines are electrically conductive. There is a risk of electric shock if energized electrical equipment is handled with hands or fabric gloves that are wet with brine
• Chlorides in the presence of water and oxygen are associated with the accelerated corrosion of common metals, such as steel, copper and brass

SECTION 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.

Personal Protective Equipment: See Section 8 for information on personal protective equipment.

Emergency Procedures: Restrict access to spill site, call fire department and notify manufacturer, stop the flow and contain spill if safe to do so, keep contaminated water from entering sewers or water courses, and avoid contact with liquid and solid.

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

Methods and Materials for Clean-up

Recovery: Completely contain spilled materials with dikes, sandbags, etc. Collect with appropriate absorbent and place into suitable container. Keep container tightly closed. Liquid material may be removed with a properly rated vacuum truck.

Neutralization: Flush spill area with water, if appropriate.

Final Disposal: For waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

Handling:

Precautions for Safe Handling:
Wash hands, exposed skin, and contaminated clothing thoroughly after handling. Do not touch eyes. Do not eat, drink, or smoke in areas where this material is used. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS.

Technical measures/precautions: Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 80°F, 27°C). Keep container tightly closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other precautions:

Prevention of contact: Wear protective gloves, protective clothing, eye, and face protection. See Section 8, Exposure Controls and Personal Protection, for additional information.

Storage:

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).

Technical measures: Liquid calcium chloride may be stored in either open-top or closed-top tanks. Open-top tanks may be used when dilution either by precipitation or by humid air exposure is not an issue or is managed by mixing the solution. Closed-top storage tanks will remain uniform in concentration for long periods of time without additional mixing. When periodic mixing is desired, it can be accomplished by pumped recirculation or by mechanical agitation. Air sparging can be used, however, product quality may be affected. Carbon dioxide in the sparging air can react with calcium chloride resulting in a calcium carbonate precipitate.

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.

Packaging or Materials of Construction: The preferred material of construction for large, liquid-storage tanks is carbon steel with an epoxy-based interior lining and epoxy-based exterior paint. Common stainless steels should not be used for liquid calcium chloride storage because they are subject to chloride stress cracking, even at temperatures as low as 100°F (38°C). Nonmetallic materials, such as fiberglass or plastic, may work well for smaller tanks at near ambient temperatures. The puncture resistance and structural strength of these materials, relative to carbon steel, should be evaluated.

Additional Information:

Physical Hazards of Significance Not Mentioned in GHS Classification

• Calcium chloride brines are electrically conductive. There is a risk of electric shock if energized electrical equipment is handled with hands or fabric gloves that are wet with brine
• Chlorides in the presence of water and oxygen are associated with the accelerated corrosion of common metals, such as steel, copper and brass

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

REGULATORY EXPOSURE LIMIT(S):
Listed below for the product components that have regulatory occupational exposure limits (OEL's) established.

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

NON-REGULATORY EXPOSURE LIMIT(S):
Listed below are the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	Skin Absorption - ACGIH	NIOSH RELs	AIHA WEELs	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Particulates Not Otherwise Specified (PNOS) Not Assigned (100 %)	10 mg/m³ (inhalable) 3 mg/m³ (respirable)	-----	-----	-----	-----	-----	-----	-----	-----
Calcium chloride 10043-52-4 (0 %)	-----	-----	-----	-----	-----	-----	-----	-----	-----

- 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.

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 closed systems when possible. 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: For dusty operations or when handling solutions of the material, wear chemical goggles. Where splashing or spraying is possible, use a face-shield in addition to chemical protective goggles.

Skin and Body Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

Hand Protection: Wear appropriate chemical resistant gloves. If contact with forearms is likely, wear gauntlet style gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types: Neoprene, Polyvinyl chloride (PVC), Nitrile rubber gloves.

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.

Other Protective Equipment: An emergency eyewash fountain and quick drench shower should be provided in the immediate work area.

HYGIENE MEASURES: Do not breathe dust or spray mist. Do not get in eyes, on skin, or on clothing. Wear

protective gloves, protective clothing, eye, and face protection. For environmental protection remove and wash all contaminated protective equipment before re-use. Keep separated from incompatible substances.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid
Physical State:	Liquid
Color:	Clear
Odor:	Odorless
Odor Threshold [ppm]:	Not applicable
Melting Point/Range:	Not applicable
Freezing Point/Range:	-20°C (-4°F)
Evaporation Rate (ether=1):	No data available
Lower Flammability Level (air):	Not applicable
Upper Flammability Level (air):	Not applicable
Explosion limits:	Not applicable
Flash point:	Not applicable
Auto-ignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
pH:	9 - Estimated (undiluted)
Viscosity:	3 cp @ 25°C (77 °F)
Kinematic Viscosity:	No data available
Water Solubility:	Completely miscible
Partition Coefficient (n-octanol/water):	Not applicable
Vapor Pressure:	11 mm Hg @ 25 °C (77 °F)
Density:	11.1 lbs/gal @ 25 °C (77 °F)
Relative Density/Specific Gravity (water=1):	1.328 @ 25 °C (77 °F)
Vapor Density (air=1):	No data available
Particle Size Distribution:	Not applicable

Other Information

Chemical Family:	Inorganic Salt
Explosive properties:	Not applicable
Oxidizing properties:	Not applicable
Bulk Density:	Not applicable
Hygroscopic:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal temperatures and pressures.

Reactivity: May liberate heat when dissolving in water or aqueous acids.

Possibility of Hazardous Reactions: See information on "Incompatible Substances" in this section.

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

POTENTIAL HEALTH EFFECTS:

ACUTE TOXICITY:

Eye contact: Causes serious eye irritation with tearing, redness, or a stinging or burning feeling. 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.

Inhalation: Mist 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 this material 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. May cause serious eye irritation. May cause eye burns. May cause watering, redness, and irritation to the eye lids, conjunctiva, and cornea.
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.

GHS HEALTH HAZARDS:

GHS: CONTACT HAZARD - EYE: Category 2A - Causes serious eye irritation

TOXICITY DATA:

PRODUCT TOXICITY DATA:

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
3016 mg/kg - Oral Acute Toxicity Estimate (ATE)	7974 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
Water 7732-18-5	>90 mL/kg (Rat)	No data available	No data available
Calcium chloride 10043-52-4	1000 mg/kg (Rat)	>5000 mg/kg (Rabbit)	No data available
Potassium Chloride 7447-40-7	2600 mg/kg (Rat)	No data available	No data available
Sodium Chloride 7647-14-5	3550 mg/kg (Rat)	>10000 mg/kg (Rabbit)	> 42 mg/L (Rat) 1 h
Calcium bromide 7789-41-5	4100 mg/kg (Rat)	>2000 mg/kg (Rabbit)	No data available

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.

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.

Standard Draize (Skin): Score - 1.4 (Rabbit - 24 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 and/or CLP criteria.

Component	NTP:	IARC (GROUP 1):	IARC (GROUP 2):	OSHA:	ACGIH (American Conference of Governmental Industrial Hygienists)	NIOSH - Pocket Guide - Carcinogens
Calcium chloride	Not listed	Not listed	Not listed	Not Listed	Not listed	Not listed
Potassium Chloride	Not listed	Not listed	Not listed	Not Listed	Not listed	Not listed
Calcium bromide	Not listed	Not listed	Not listed	Not Listed	Not listed	Not listed

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. The substance is not classified as a specific target organ toxicant after single exposure per GHS and/or CLP criteria.

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. The substance is not classified as a specific target organ toxicant upon repeated exposure per GHS and/or CLP criteria.

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.

INGESTION HAZARD: Acute Toxicity Estimate (oral) is 3016 mg/kg and meets the GHS classification criteria of more than 2000 mg/kg and less than or equal to 5000 mg/kg. Therefore, this mixture is classified as Category 5 Acute Toxin Oral (may be harmful if swallowed).

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. Not classified as a reproductive toxin per GHS and/or CLP criteria.

ASPIRATION HAZARD: Not classified as an aspiration hazard per GHS and/or CLP criteria.

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: See Toxicokinetics above.

BIOLOGICAL DISTRIBUTION: See Toxicokinetics above.

PATHOGENICITY AND ACUTE INFECTIOUSNESS (ORAL, DERMAL, AND INHALATION): Not applicable.

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.

Health Hazards of Significance Not Mentioned in GHS Classification
• ACUTE TOXICITY - ORAL: Category 5 (May be harmful if swallowed)

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY (EC, IC, and LC):

Ecotoxicity - Available LOLI Data for Components: The component ecotoxicity data is populated by the LOLI database and may differ from the product ecotoxicity data given

Component:	*Freshwater Fish:*	*Invertebrate Toxicity:*	*Algae Toxicity:*	*Other Toxicity:*
Calcium chloride 10043-52-4 (32-33 %)	LC50, bluegill (Lepomis macrochirus): 8,350 - 10,650 mg/l	LC50, water flea Daphnia magna: 759 - 3,005 mg/l	No data available	No data available
Potassium Chloride 7447-40-7 (<1 %)	LC50, rainbow trout (Oncorhynchus mykiss), 96 h: 4,236	EC50, water flea Daphnia magna, 24 h, immobilization: 590	*EC50 Desmodesmus subspicatus (72 h) =2500 mg/L	No data available

	mg/l	mg/l - LC50, water flea Ceriodaphnia dubia, 96 h: 3,470 mg/l		
Sodium Chloride 7647-14-5 (<1 %)	*LC50 Lepomis macrochirus: 5560 - 6080 mg/L 96h flow-through *LC50 Lepomis macrochirus: 12946 mg/L 96h static *LC50 Pimephales promelas: 6020 - 7070 mg/L 96h static *LC50 Pimephales promelas: 7050 mg/L 96h semi-static *LC50 Pimephales promelas: 6420 - 6700 mg/L 96h static *LC50 Oncorhynchus mykiss: 4747 - 7824 mg/L 96h flow-through	*EC50 Daphnia magna: 1000 mg/L 48h *EC50 Daphnia magna: 340.7 - 469.2 mg/L 48h	No data available	*LC50 Eisenia foetida (48 h filter paper) 0.1 - 1 mg/cm2

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:

Persistent, Bioaccumulative, and Toxic (PBT) and Very Persistent and Very Bioaccumulative (vPvB) Assessment:
According to Annex XIII of the REACH Regulation 1907/2006/EC inorganic substances do not need to be subjected to a PBT assessment.

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 wastewater 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)

Status - ICAO/IATA: Not Regulated

SECTION 15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
Health hazard classifications were performed using OSHA Hazard Communication 2024 (1910.1200) Appendix A and/or UN GHS Rev. 9 (2021). 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.

SARA HAZARD CATEGORIES ALIGNED WITH GHS (2018):
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.

Component	EPA RMP Toxic or Flammable TPQ	PSM - Highly Hazardous Substances, Toxics and Reactives	Flash Point
Sodium Chloride 7647-14-5 (<1)	Not Listed	Not Listed	

LIQUIDOW® FOOD GRADE CALCIUM CHLORIDE

FDA: This material has Generally Recognized As Safe (GRAS) status under specific U.S. Food and Drug Administration (FDA) regulations. Additional information is available from the Code of Federal Regulations, which is accessible on the FDA's website. Only food grade product meets the FDA's Food Safety Modernization Act (FSMA) requirements and is guaranteed to be produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the FDA. Food grade product is produced in a facility that is accredited as a Safe Quality Food (SQF) Level 2 Facility, certified under the Global Food Safety Initiative (GFSI), and meets the Food Chemical Codex (FCC) requirements

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

Component	Clean Water Act - Priority Pollutants	CAA - ODS CLASS 1 AND CLASS 2	CAA - Volatile Organic Compounds (VOCs) in SOCMI	CAA - HON Rule - Organic HAPs	CAA - Hazard Air Pollutants	CAA - Urban HAPs List (Integrated Urban Strategy)	SNAP - Substitutes for ODS	EPA RMP Toxic or Flammable TPQ
Sodium Chloride 7647-14-5 (<1 %)	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed

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 (32-33 %)	Listed	ACTIVE	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Potassium Chloride 7447-40-7 (<1 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not Listed	Not listed
Sodium Chloride 7647-14-5 (<1 %)	Listed	ACTIVE	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Calcium bromide 7789-41-5 (<0.4 %)	Listed	ACTIVE	Not Listed	Not listed	Not Listed	Not Listed	Not listed

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

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 (32-33)	Listed	Not Listed
Potassium Chloride 7447-40-7 (<1)	Listed	Not Listed
Sodium Chloride 7647-14-5 (<1)	Listed	Not Listed
Calcium bromide 7789-41-5 (<0.4)	Listed	Not Listed

STATE REGULATIONS

There are no applicable state regulations for this product or its components.

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 Occidental Chemical Corporation 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	U.S. - California - Proposition 65 - Carcinogens List	CA. Prop. 65 Teratogen	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 (32-33 %)	Not listed	Not listed	Not Listed	Not Listed	Not Listed	Not Listed
Potassium Chloride 7447-40-7 (<1 %)	Not listed	Not listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride 7647-14-5 (<1 %)	Not listed	Not listed	Not Listed	Not Listed	Not Listed	Not Listed
Calcium bromide 7789-41-5 (<0.4 %)	Not listed	Not listed	Not Listed	Not Listed	Not Listed	Not Listed

Component	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List
Calcium chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Potassium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Sodium Chloride	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Calcium bromide	Not Listed	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 - Greenhouse Gases (GHG) Subject to Mandatory Reporting	Canadian Chemical Inventory:	NDSL
Calcium chloride 10043-52-4 (32-33)	Not listed	Not Listed	Not Listed	Listed on inventory	Not Listed
Potassium Chloride 7447-40-7 (<1)	Not listed	Not Listed	Not Listed	Listed on inventory	Not Listed
Sodium Chloride 7647-14-5 (<1)	Not Listed	Not Listed	Not Listed	Listed on inventory	Not Listed
Calcium bromide 7789-41-5 (<0.4)	Not listed	Not Listed	Not Listed	Listed on inventory	Not Listed

SECTION 16. OTHER INFORMATION

Prepared by: Occidental Chemical Corporation - HES&S Product Stewardship Department

Rev. Date: 11-Nov-2025

LIQUIDOW® FOOD GRADE CALCIUM CHLORIDE

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:
• Scheduled review
• SDS format adopts revisions to the Hazardous Products Regulations (HPR) to include revisions to “Section 9: Physical and chemical properties” and ensures classification with at a minimum the seventh revised edition of GHS and certain elements from the eighth revised edition (Revision 8)
• SDS format adopts revisions to the OSHA's 2024 Hazard Communication Rule 29CFR 1910.1200 and ensures classification with at a minimum the seventh revised edition of GHS and certain elements from the eighth revised edition (Revision 8)

IMPORTANT:
Important: The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our current knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal, and other factors that may involve other or additional legal, environmental, safety or performance considerations, and Occidental Chemical Corporation assumes no liability whatsoever for the use of or reliance upon this information. Appropriate handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws.

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