Safety Data Sheet

Section 01 - Identification

Product Identifier	Calcium Chloride 77%
Other Means of Identification	Calcium chloride dihydrate
Product Use and Restrictions on Use	Industrial uses, drilling mud additives, workover fluids, completion fluids, ice melt, dust control, refrigeration.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

Eye Corrosion/Irritation Category 2

Physical Hazards

No known physical hazards.

Warning

Hazard Statements

H319 – Causes serious eye irritation.

Pictograms

Precautionary Statements

P264 – Wash hands thoroughly after handling.
P280 – Wear eye protection and face protection.
P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 – If eye irritation persists: Get medical advice/attention.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Calcium Chloride, dihydrate	10035-04-8	77%	

Section 04 - First Aid Measures

Inhalation

If symptoms are experienced, remove victim to fresh air. Seek medical attention.

Skin Contact / Absorption

Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.

Eye Contact

Contact lenses should never be worn when working with this product. Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. If irritation persists, seek medical attention.

Ingestion

NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim rinse mouth with water again. Seek medical attention.

Additional Information

Treatment based on judgment of the physician in response to reactions of the patient.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media

Product does not burn. Use appropriate extinguishing media for material that is supplying the fuel to the fire.

Unsuitable Extinguishing Media

Not Available

Specific Hazards Arising From the Chemical

Well-sealed containers may rupture violently when exposed to fire or excessive heat for sufficient time.

Special Protective Equipment and Precautions for Fire-Fighters

Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

Further Information

Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures

Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Flush with water to remove any residue.

Environmental Precautions

Prevent material from entering sewers, soils, waterways and groundwater.

Methods and Materials for Containment and Cleaning Up

Contain spilled solutions with earth, sand, or absorbent material which does not react with spilled material. Remove liquid by pumps or vacuum equipment and place in suitable, covered, labelled containers.
Solid spills: Shovel into clean, dry, labelled containers and cover. Flush area with water.

Section 07 - Handling and Storage

Precautions for Safe Handling

This material is an EYE IRRITANT. Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Avoid formation of dust and aerosols.

Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, out of direct sunlight and away from sources of heat. Prolonged storage may cause product to cake and become wet. Protect product from moisture.
Incompatibilities	Reactive metals, hot water, bromine trifluoride, methyl vinyl ether, furan-2-peroxycarboxylic acid, boric and calcium oxide.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Calcium Chloride, Dihydrate	Not Available		

Engineering Control(s)

Ventilation Requirements	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
Other	Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.
Hand Protection	Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Skin and Body Protection	Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse. Guidelines for calcium chloride, 30-70%: RECOMMENDED (resistance to breakthrough longer than 4 hours): Tychem(TM) Responder(TM). Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.
Respiratory Protection	NIOSH/MSHA approved respirator for dust should be worn if the potential to exceed exposure limit requirements or if workplace regulations mandate protection is needed.
Thermal Hazards	Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Solid
Colour	White flakes
Odour	Odourless
Odour Threshold	Not Applicable

Property

pH	8-9 (34% solution)
Melting Point/Freezing Point	176°C

Initial Boiling Point and Boiling Range	1670°C
Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Non-Flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	Not Applicable
Vapour Density (Air=1)	Not Applicable
Relative Density	1.850 g/cm^3
Solubility(ies)	Very soluble in water. Soluble in ethanol, acetone and acetic acid.
Partition Coefficient: n-octanol/water	Log P_{ow} = 0.05
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	Not Available
Viscosity	Not Applicable
Explosive Properties	Not Available
Specific Gravity (Water=1)	1.85
% Volatiles by Volume	Not Available
Formula	$CaCl_2 \cdot 2H_2O$
Molecular Weight	147.02

Section 10 - Stability and Reactivity

Reactivity	The anhydrous, monohydrate and dehydrate forms of calcium chloride generate large amounts of heat when dissolved in water or during water absorption.
Stability	Product is stable. Hygroscopic.
Possibility of Hazardous Reactions	Polymerization does not occur.
Conditions to Avoid	Exposure to moist air or water, addition to hot water.
Incompatible Materials	Reactive metals, hot water, bromine trifluoride, methyl vinyl ether, furan-2-peroxycarboxylic acid, boric and calcium oxide.
Hazardous Decomposition Products	None known.

Section 11 - Toxicological Information

Acute Toxicity

Component	Oral LD_{50}	Dermal LD_{50}	Inhalation LC_{50}
Calcium Chloride (77%)	658 mg/kg (rabbit)	3,415 mg/kg (rabbit)	208 mg/m^3 (rat, 4hr)

Chronic Toxicity – Carcinogenicity

Component	IARC
Calcium Chloride, Dihydrate	Not carcinogenic

Skin Corrosion/Irritation	Cause no to slight irritation.
Ingestion	May irritate the mouth and throat. Large doses are expected to cause nausea and vomiting.
Inhalation	Dust or mist inhalation may irritate nose, throat, and lungs.
Serious Eye Damage/Irritation	Calcium chloride can cause serious eye damage based on animal information.
Respiratory or Skin Sensitization	Not Available
Germ Cell Mutagenicity	The available information does not suggest that calcium chloride is a mutagen.
Reproductive Toxicity	The available information does not suggest that calcium chloride is a developmental toxin.
STOT-Single Exposure	Not Available
STOT-Repeated Exposure	Repeated or prolonged contact to calcium chloride powder or solutions has caused inflammation and tissue death.
Aspiration Hazard	Not Available
Synergistic Materials	In animal studies, calcium chloride has decreased chromosome aberrations caused by cobaltous chloride, decreased the tumor promoting activity of sodium chloride and decreased pre-cancerous lesions caused by a known carcinogen

Section 12 – Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Calcium Chloride, Dihydrate	EC_{50}(Diatom, 96hr): 3130mg/L	LC_{50} (Pimephales promelas, 96hr): 4630mg/L	EC_{50}(Daphnia magna, 64hr): 920mg/L

Biodegradability	Calcium chloride does not biodegrade.
Bioaccumulation	Calcium chloride does not bioaccumulate.
Mobility	Calcium chloride is readily dissociated into calcium and chloride ions in water. These physico-chemical properties indicate that calcium chloride released into the environment is distributed into the water compartment in the form of calcium and chloride ions.
Other Adverse Effects	Not Available

Section 13 – Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 – Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard Class(es)	Not Regulated
Packaging Group	Not Regulated
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available

TDG

Other Secure containers (full and/or empty) with suitable hold down devises during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 – Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 – Other Information

Preparation Date August 18, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

1) CHEMINFO
2) eChemPortal
3) TOXNET
4) Transportation of Dangerous Goods Canada
5) HSDB
6) ECHA
7) PAN

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