



MATERIAL SAFETY DATA SHEET

Calcium Hypochlorite

Section 01 - Chemical And Product And Company Information

Product Identifier HTH® Dry Chlorine Granular

Product Use Disinfection in swimming pools and drinking water supplies; slime and odour control.

Supplier Name..... ClearTech Industries Inc.
2303 Hanselman Avenue
Saskatoon SK S71 5Z3
Canada

Prepared By..... ClearTech Industries Inc. Technical Department
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Preparation Date..... March 3, 2003

24-Hour Emergency Phone..... 306-664-2522

Section 02 - Composition / Information on Ingredients

Hazardous Ingredients	Calcium Hypochlorite	60-80%
	Sodium Chloride	10-20%
	Calcium Chloride	0-5%
	Calcium Hydroxide	0-4%
	Calcium Carbonate	0-5%
	Calcium Chlorate	0-5%
CAS Number	Calcium Hypochlorite	7778-54-3
	Sodium Chloride	7647-14-5
	Calcium Chloride	10043-52-4
	Calcium Hydroxide	1305-62-0
	Calcium Carbonate	471-34-1
	Calcium Chlorate	10137-74-3
Synonym (s)	Calcium oxychloride; chlorinated lime; hypochlorous acid; Chloryte; Chlor-tabs; Sock It dry chlorine granular	

Section 03 - Hazard Identification

Inhalation..... Dust and mist irritate the nose and throat. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatibles materials (e.g., acids and water/moisture) can result in high concentrations of chlorine vapour, either of which may result in burns to the respiratory tract, producing lung edema, shortness of breath, wheezing, choking, chest



pains, impairment of lung function, and possible permanent lung damage.

Skin Contact / Absorption	Calcium hypochlorite dust and solutions can cause irritation and in severe cases, chemical burns, which are characterized by redness, swelling, and scab formation. Moisture from perspirations will accelerate tissue destruction.
Eye Contact	Exposure to calcium hypochlorite can cause eye irritation and vision impairment. Contact can produce impairment of vision and corneal damage.
Ingestion	When ingested, there will be burning of the mouth and throat. Can cause abdominal cramps, vomiting, diarrhea, nausea, and/or tissue ulceration which may lead to convulsions, coma, and even death.
Exposure Limits	Ceiling = 3 mg/m3 as chlorine (manufacturer's internal standard)

Section 04 - First Aid Measures

Inhalation	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate 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	Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention
Ingestion	Immediately give large amounts of water. Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Section 05 - Fire Fighting

Conditions of Flammability	Non-flammable. Calcium hypochlorite is a strong oxidizing agent; may form explosive mixtures with combustibles, organic, or other oxidizable materials.
Means of Extinction	Drench with water, and cool surrounding products and area with water. Avoid dry extinguishers containing ammonium compounds.
Flash Point	Not Applicable
Auto-ignition Temperature	Not Applicable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable



- Hazardous Combustible Products.** Chlorine, oxygen, and chlorine monoxide at higher temperatures. Water in contact with hot calcium hypochlorite can release hydrochloric acid or chlorine gas.
- Special Fire Fighting Procedures...** Wear NIOSH-approved self-contained breathing Apparatus and protective clothing.
- Explosion Hazards.....** Not sensitive to mechanical impact or static discharge.

Section 06 - Accidental Release Measures

- Leak / Spill.....** Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Prevent material from entering sewers.
- Deactivating Materials.....** Hydrogen peroxide, sodium sulphite, or sodium bisulphite.

Section 07 - Handling and Storage

- Handling Procedures.....** 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.
- Storage Requirements.....** Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials. Keep out of the sun.

Section 08 - Personal Protection and Exposure Controls

Protective Equipment

- Eyes.....** 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.
- Respiratory.....** Use NIOSH-approved respirator - full facepiece with chlorine and dust/mist cartridges when dust is present. Use a self-contained breathing apparatus should be used for major spills.
- Gloves.....** Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.
- Clothing.....** Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing with soap and water, dry thoroughly before reuse.
- Footwear.....** Impervious boots of chemically resistant material should be worn at all times



Other..... No other information available

Engineering Controls

Ventilation Requirements..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other..... Emergency shower and eyewash should be in close proximity.

Section 09 - Physical and Chemical Properties

Physical State	Solid
Odor and Appearance	White, free flowing granular solid with a strong chlorine odour
Odor Threshold	~ 1.4 mg/m3 based on chlorine
Specific Gravity (Water=1)	2.35 (calcium hypochlorite)
Vapor Pressure (mm Hg, 20C)	Not Applicable
Vapor Density (Air=1)	Not Applicable
Evaporation Rate	Not Applicable
Boiling Point	100°C decomposes
Freeze/Melting Point	100°C decomposes
pH	10.4-10.8 (1% solution)
Water/Oil Distribution Coefficient ...	Not Applicable
Bulk Density	800 kg/m3
% Volatiles by Volume	Not Available
Solubility in Water	18% at 25°C
Molecular Formula	Ca(OCl) ₂
Molecular Weight	142.98 (calcium hypochlorite)

Section 10 - Stability and Reactivity

Stability..... Stable. Heat and contamination could cause decomposition.



Incompatibility	Acids, reducing agents, combustible materials such as wood, cloth, or organic materials, dry powder fire extinguishers containing monoammonium phosphate, metals such as iron and copper and their alloys, water or steam, ammonia, urea, amines.
Hazardous Products of Decomposition	Water in contact with calcium hypochlorite releases chlorine gas. Contact with incompatibles presents an explosion and fire hazard. Toxic or corrosive fumes may be liberated. These include chlorine gas.
Polymerization	Will not occur

Section 11 - Toxicological Information

Irritancy	Causes burns to eyes and skin
Sensitization	Not Available
Chronic/Acute Effects	Skin irritation may occur from repeated or prolonged skin contact. Chronic inhalation exposure may cause impairment of lung function and permanent lung damage. Asthma, respiratory and cardiovascular disease may be aggravated by exposure to this chemical.
Synergistic Materials	Not Available
Animal Toxicity Data	LC50(inhalation, rat, 1 hour) = 1300 mg/m3 based on chlorine LD50(oral, rat) = 850 mg/kg LD50(dermal, rabbit) > 2000 mg/kg
Carcinogenicity	Not considered to be carcinogenic as per IARC, NTP, OSHA, and ACGIH
Reproductive Toxicity	Not reported to show reproductive toxicity.
Teratogenicity	Not a Tetrogen
Mutagenicity	Not a Mutagen

Section 12 - Ecological Information

Fish Toxicity	<i>Aquatic toxicity:</i> LC50(bluegill, 96 hour) = 0.088 mg/L LC50(rainbow trout, 96 hour) = 0.16 mg/L LC50(daphnia magna, 48 hour) = 0.11 mg/L <i>Wildlife toxicity</i> LC50(bobwhite quail, dietary) > 5000 ppm LC50(mallard ducklings, dietary) > 5000 ppm LD50(oral, bobwhite quail) = 3474 mg/kg
Biodegradability	Not Available
Environmental Effects	Not Available



Section 13 - Disposal Considerations

Waste Disposal..... Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transportation Information

TDG Classification

Class..... 5.1

Group..... II

PIN Number..... UN2880

Other..... Secure containers (full and/or empty) with suitable hold down devises during shipment.

Section 15 - Regulatory Information

WHMIS Classification..... Product is packaged as a consumer product.

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

Section 16 - Other Information

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.



ClearTech Industries Inc. - Locations

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Location	Address	Postal Code	Phone Number	Fax Number
Richmond BC	12431 Horseshoe way	V7A 4X6	604-272-4000	604-272-4596
Calgary AB	5516E - 40 th St. S.E.	T2C 2A1	403-279-1096	403-236-0989
Edmonton AB	11750 - 180 th Street	T5S 1N7	780-452-6000	780-452-4600
Saskatoon SK	2302 Hanselman Avenue	S7L 5Z3	306-933-0177	306-933-3282
Regina SK	555 Henderson Drive	S42 5X2	306-721-7737	306-721-8611
Winnipeg MB	340 Saulteaux Crescent	R3J 3T2	204-987-9777	204-987-9770
Mississauga ON	7480 Bath Road	L4T 1L2	905-612-0566	905-612-0575

24 Hour Emergency Number - All Locations - 306-664-2522