MATERIAL SAFETY DATA SHEET

Calcium Hypochlorite

Section 01 - Chemical And Product And Company Information

Product Identifier ..... HTH® Dry Chlorine Granular

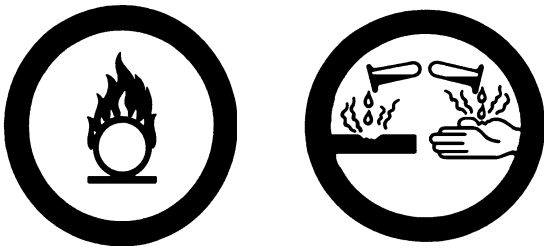
Product Use .....Disinfection in swimming pools and drinking water supplies; slime and odour control.

Supplier Name..... ClearTech Industries Inc.
2302 Hanselman Avenue
Saskatoon, SK. Canada
S7L 5Z3

Prepared By.....…….….. ClearTech Industries Inc. Technical Department
Phone: (306)664-2522

Preparation Date.....…….….. July 9, 2008

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%
	Water	5.5-10%

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
	Water	7732-18-5

Synonym (s).....Calcium oxychloride; chlorinated lime; hypochlorous acid; Chlortabs

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= 3mg/m^3 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.

Additional Information..... Not available

Section 05 - Fire Fighting

Conditions of Flammability..... Non-flammable. Note 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. Stop or reduce leak if safe to do so. Prevent material from entering sewers. Flush with water to remove any residue.

Deactivating Materials..... Not available

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 and dry thoroughly before reuse.

Clothing..... Body suits, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Footwear..... Impervious boots of chemically resistant material should be worn at all times

Engineering Controls

Ventilation Requirements..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure, and control of process conditions should be provided. 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/m^3 based on chlorine

Specific Gravity (Water=1)..... Not applicable

Vapor Pressure (mm Hg, 20C)..... Not applicable

Vapor Density (Air=1)..... Not applicable

Evaporation Rate..... Not applicable

Boiling Point..... Not applicable

Freeze/Melting Point..... Decomposes at 170-180°C

pH..... 10.4-10.8 (1% solution)

Water/Oil Distribution Coefficient.... Not applicable

Bulk Density..... 0.8 g/cm^3

% Volatiles by Volume..... Not available

Solubility in Water..... 18% at 25°C

Molecular Formula..... $Ca(OCl)_2$

Molecular Weight..... 142.98

Section 10 - Stability and Reactivity

Stability..... Stable in optimum storage conditions. Heat, sunlight 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 irritation and 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..... LC_{50}(inhalation,rat,1 hour)= 1300mg/m^3 based on chlorine
LD_{50}(oral,rat)= 850mg/kg
LD_{50}(dermal,rabbit)= > 2000mg/kg

Carcinogenicity..... Not considered to be carcinogenic as per IARC, NTP, OSHA, and ACGIH.

Reproductive Toxicity..... Not reported to show reproductive toxicity.

Teratogenicity..... Results in laboratory analysis show it is not a tetrogen.

Mutagenicity..... Results in laboratory analysis show it is not a mutagen.

Section 12 - Ecological Information

Fish Toxicity..... LC_{50}(bluegill,96 hour)= 0.088mg/L
LC_{50}(rainbow trout,96 hour)= 0.16mg/L
LC_{50}(daphnia magna,48 hour)= 0.11mg/L

Biodegradability..... Not available

Environmental Effects..... Not available

Section 13 - Disposal Consideration

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.....…….……... UN 2880

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

Section 15 - Regulatory Information

WHMIS Classification.....……....C, E

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.

NSF Certification.....Product is certified under ANSI/NSF Standard 60 for disinfection, oxidation and algicide treatment at a maximum dosage of 15mg/L.

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.

Attention: Receiver of the chemical goods / MSDS 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 Material 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 or technical service department.

ClearTech Industries Inc. - Locations

Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3
Phone: 306-664-2522
Fax: 306-665-6216

www.ClearTech.ca

Location	Address	Postal Code	Phone Number	Fax Number
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	604-272-4000	604-272-4596
Calgary, AB.	5516E - 40th St. S.E.	T2C 2A1	403-279-1096	403-236-0989

Edmonton, AB.	11750 - 180th 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