

# MATERIAL SAFETY DATA SHEET

## Calcium Hypochlorite

### Section 01 - Chemical And Product And Company Information

**Product Identifier** ..... Accu-Tab SI Calcium Hypochlorite Tablets

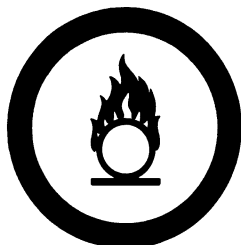
**Product Use** ..... Disinfection/sanitizer for potable water, wastewater, industrial processing and cooling water.

**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**..... November 9, 2010

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



### Section 02 - Composition / Information on Ingredients

<b>Hazardous Ingredients</b> .....	Calcium Hypochlorite	> 65%
	Calcium Hydroxide	< 2%
	Calcium Carbonate	< 2%
	Calcium Chlorate	< 2%
<b>CAS Number</b> .....	Calcium Hypochlorite	7778-54-3
	Calcium Hydroxide	1305-62-0
	Calcium Carbonate	471-34-1
	Calcium Chlorate	10137-74-3
<b>Synonym (s)</b> .....	None	

### 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 (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 chemical burns, which are characterized by redness, swelling and tissue destruction.
- Eye Contact**..... Exposure to calcium hypochlorite can cause severe eye irritation and vision impairment including blindness.
- Ingestion**..... Ingestion can cause burning of the mouth and throat. Product can be fatal if swallowed.
- Exposure Limits**..... ACGIH-TWA: 0.5mg/m<sup>3</sup> (chlorine)  
ACGIH-STEL: 1.0mg/m<sup>3</sup> (chlorine)  
ACGIH-TWA: 5mg/m<sup>3</sup> (calcium hydroxide)  
ACGIH-TWA: 10mg/m<sup>3</sup> (calcium carbonate, total dust)
- OSHA-TWA: 0.5mg/m<sup>3</sup> (chlorine)  
OSHA-STEL: 1.0mg/m<sup>3</sup> (chlorine)  
OSHA-TWA: 5mg/m<sup>3</sup> (calcium hydroxide)  
OSHA-PEL: 15mg/m<sup>3</sup> (calcium carbonate, total dust)

### 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 medical attention if difficulties persist.
- Skin Contact / Absorption**..... Remove contaminated clothing. Wash with gentle stream of water for at least 15 minutes. 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 only. Do not use dry chemicals or foams.

**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. Product decomposes at approximately 170-180°C which releases oxygen.

**Explosion Hazards**..... Not sensitive to mechanical impact or static discharge.

**Section 06 - Accidental Release Measures**

**Leak / Spill**..... Use extreme caution in handling spilled material. Do not mix with any other chemicals. Contamination with moisture, acids, organics or other easily combustible materials such as petroleum, paint products, wood or paper may cause fire or violent decomposition. If fire or decomposition occurs in area of spill, immediately douse with plenty of water. Otherwise, sweep up all visible material using a clean (new, if possible), dry shovel and broom and dissolve material in water. Spilled material that has been swept up and dissolved in water should be used immediately in the normal application for which this product is being consumed.

**Deactivating Materials**..... Dissolve spilled material in water and carefully add hydrogen peroxide 35% (500mL hydrogen peroxide per pound calcium hypochlorite) then dilute further with water and dispose according to local regulatory bylaws.

## 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 such as combustible and flammable products. Keep out of the sun. Keep product packaging clean and free from contact including other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.

## 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. A self-contained breathing apparatus should be used for major spills.

**Gloves**..... Impervious gloves of chemically resistant material (neoprene, butyl rubber, nitrile) 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

<b>Physical State</b> .....	Solid
<b>Odor and Appearance</b> .....	White tablets with a slight chlorine odour
<b>Odor Threshold</b> .....	Not available
<b>Specific Gravity (Water=1)</b> .....	Not applicable
<b>Vapor Pressure (mm Hg, 20C)</b> .....	Not applicable
<b>Vapor Density (Air=1)</b> .....	Not applicable
<b>Evaporation Rate</b> .....	Not applicable
<b>Boiling Point</b> .....	Not applicable
<b>Freeze/Melting Point</b> .....	Decomposes at 170-180°C
<b>pH</b> .....	Alkaline
<b>Water/Oil Distribution Coefficient</b> ....	Not applicable
<b>Bulk Density</b> .....	1.07-1.13 g/cm <sup>3</sup>
<b>% Volatiles by Volume</b> .....	Not available
<b>Solubility in Water</b> .....	217g/L at 27°C
<b>Molecular Formula</b> .....	Ca(OCl) <sub>2</sub>
<b>Molecular Weight</b> .....	142.98

## Section 10 - Stability and Reactivity

<b>Stability</b> .....	Stable in optimum storage conditions. Heat, sunlight and contamination could cause decomposition.
<b>Incompatibility</b> .....	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.
<b>Hazardous Products of Decomposition</b> ..	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<sub>50</sub>(inhalation, rat, 1 hour): no mortality at 3.5mg/L (slight to very low toxicity)  
LD<sub>50</sub>(oral, rat): 850mg/kg  
LD<sub>50</sub>(dermal, rabbit): > 1000mg/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<sub>50</sub>(bluegill, 96 hour): 0.088mg/L

Biodegradability..... Not available

Environmental Effects..... Toxic to fish

### 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 devices 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](http://www.ClearTech.ca)**

<b>Location</b>	<b>Address</b>	<b>Postal Code</b>	<b>Phone Number</b>	<b>Fax Number</b>
Richmond, B.C.	12431 Horseshoe Way	V7A 4X6	604-272-4000	604-272-4596
Calgary, AB.	5516E - 40 <sup>th</sup> St. S.E.	T2C 2A1	403-279-1096	403-236-0989
Edmonton, AB.	11750 - 180 <sup>th</sup> 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**