SAFETY DATA SHEET

1. Identification

Product identifier: ProChlo, Calcium Hypochlorite

Additional identifiers:

Recommended use:
Disinfection is swimming pools and drinking water, treatment of industrial cooling water, slime control, odor control, sewage and waste water treatment.

Recommended restrictions:
Use in accordance with supplier’s recommendations.

Manufacturer/Importer/Supplier/Distributor information

Company name: F2 Industries, LLC
Address: 5543 Edmondson Pike # 156
Nashville, TN, 37211 USA
Telephone: 615-459-4620
E-mail: reb@f2ind.com
Website: www.f2ind.com
Contact person: William “Reb” Ferrell

Emergency Telephone: For Hazardous Materials [or Dangerous Goods] Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC at CHEMTREC®, USA: 001 (800) 424-9300
CHEMTREC®, Canada: 001 (703) 527-3887

2. Hazard(s) identification

Physical hazards: Oxidizing solids Category 2
Health hazards: Acute toxicity, oral Category 4
Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1
Specific target organ toxicity, single exposure Category 3 (Respiratory Tract irritation)

Environmental hazards: Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards: Not classified.

Label elements:

Signal word: Danger

Hazard statement:
May intensify fire; oxidizer. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention:
Keep away from heat. Keep/Store away from clothing and other combustible materials. Take any precaution to avoid mixing with combustibles. Use only outdoors or in a well-ventilated area. Do not breathe mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Avoid release to the environment.

Response:
In case of fire: Use water for extinction. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If exposed: Call a poison center/doctor. Collect spillage.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Hypochlorite</td>
<td>7778-54-3</td>
<td>&gt;65</td>
</tr>
<tr>
<td>Calcium Chlorate</td>
<td>10137-74-3</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>471-34-1</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Calcium Hydroxide</td>
<td>1305-62-0</td>
<td>&lt;2</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>7647-14-5</td>
<td>&lt;17</td>
</tr>
</tbody>
</table>

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation: Remove source of contamination or move victim to fresh air. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped start CPR (cardiopulmonary resuscitation). Get medical attention immediately.

Skin contact: Take off immediately all contaminated clothing. Immediately flush skin with plenty of water. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of lukewarm water for up to 20 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Take care not to raise contaminated water into affected eye. Get medical attention immediately.

Ingestion: Never give anything by mouth if victim is rapidly losing consciousness, or if unconscious or convulsing. Have victim rinse mouth thorough with water. Have victim drum one cup (240-300ml 8-10 oz) to dilute material in stomach. Do not induce vomiting. If vomiting occurs naturally, rinse mouth and repeat administration of water. If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped cardiopulmonary resuscitation (CPR) immediately. Get medical attention immediately.

5. Fire-fighting measures

Means of Extinction: Drench with water and cool surrounding products with water. Water in contact with hot hypochlorite can release hydrochloric acid or chlorine gas. Use appropriate self-fire extinguishing agents – Use water only.

Flash Point and Methods of Determination: Not combustible (does not burn). Be aware that Calcium Hypochlorite can decompose violently at temperatures above 150° C. Releasing heat and oxygen gas.

Upper Flammable Limit: Not applicable.
Lower Flammable Limit: Not applicable.
Auto Ignition temperature: Not applicable.
Hazardous combustions products: Oxygen, Chlorine and Chlorine Monoxide
Protective Equipment: In case of fire wear self-contained breathing apparatus. Use personal protective.
6. Accidental release measures

**Personal precautions:** In case of violent reaction and ignition, ensure proper and adequate ventilation and remove all the resources of ignition. Use personal protective requirement and evacuate people to safe areas.

**Environmental Precautions:** Ensure the production does not enter the drains and do not allow the material to contaminate ground water systems.

**Methods of Clean up:** Protect from contamination and ensure the disposal is done promptly into the suitable containers.

7. Handling and storage

**Precautions for safe handling:** Avoid generation dust. Avoid mixing pure material with contaminated material. Use smallest possible amounts in designated areas with adequate ventilation.

**Conditions for safe storage:** Store in original containers. Keep container tightly closed in a clean, cool, open and well-ventilated place. Keep out of sun.

8. Exposure controls/personal protection

**Engineering Controls:** Local exhaust ventilation required when exposure to dust occurs.

**Precautions/Procedure**

**In case of spill:** Restrict access to area until completion of clean up.

**Personal Protective Equipment:**

**Respiration Protection:** Wear dust mask or NIOSH approved type canister type respirator suitable for chlorine.

**Eye/Face Protection:** Chemical safety goggles, face shields are necessary.

**Skin Protection:** Use impervious gloves, body suite, boots, and/or other resistant protective clothing. Have safety shower/eye wash fountain readily available in the immediate work area.

**Materials for Protective Clothing:** Butyl rubber, natural rubber, neoprene, nitrile/polyvinyl chloride, polyurethane, polyvinyl chloride.

9. Physical and chemical properties

**Physical state**
Solid granules

**Appearance Form**
White, free flowing granules with a strong chlorine odor.

**Odor threshold**
Not available.

**pH**
11.5 (5% Solution)

**Specific gravity**
2.050 – 2.20 @ 20°C (Water = 1@4°C)

**Melting point/freezing point**
Decomposes at temperature above 150°C

**Boiling point**
Not available.

**Vapor Pressure**
Not available.

**Vapor Density**
Not available.

**Evaporation Rate**
Not available.

10. Stability and reactivity

**Reactivity**
Calcium Hypochlorite should be kept away from household soap, paint products, sustain lotions, solvents, acid, beverages, lighted cigarettes, combustible material, garbage, dirt, rags, organic material and other pool chemicals. Mixing with any of the above material can initiate a hazardous decomposition of Calcium Hypochlorite. Calcium Hypochlorite should not be mixed with anything but water.

**Chemical Instability**
Heat, acids, and organic compounds may cause hazardous decomposition of Calcium Hypochlorite. Water added to container to container of Calcium Hypochlorite may generate enough heat to initiate the hazardous decomposition of material.

**Ammonia, Urea and conditions of reactivity**
From reactive and toxic chloramines

**Acids**
Release Chlorine gas

**Metal Oxides**
Can react violently

**Hazardous decomposition**
Chlorine and Oxygen
**11. Toxicological information**

**Local effects:**
When contacted with skin and eyes, causes severe caustic burns. If inhaled the corrosive and substances can lead to a toxic edema of lungs. Symptoms may be delayed causing throat pain and cough. Ingestion causes burns of the upper digestive and respiratory tracts if swallowed.

**Acute Inhalation LC50:** (rat) no mortality at 3.5 mg/l (1 hour). Slight to very low toxicity
**Acute Dermal LD50:** (rabbit) >1000 mg/kg. Slight to very low toxicity
**Acute Oral LD50:** (rat) 850 mg/kg. Slight to very low toxicity

**Carcinogenicity Toxicity:** Not available.
**Reproductive Toxicity:** Not available.
**Mutagenecity:** Not available.

**12. Ecological information**

**Ecotoxicity LC50:** 0.088mg/L996hr bluegill sunfish – very toxic to aquatic organisms. Make sure not to allow the material contaminate the ground water system.

**Environmental fate:**
- **Mobility:** Soluble
- **Biodegradation:** Not available
- **Bioaccumulation:** Not available

**Physical / Chemical:**
- **Hydrolysis:** Not available
- **Photolysis:** Not available
- **Additional information:** Not available

**13. Disposal considerations**

**Clean-up:** Do not touch spilled material. Prevent material from entering sewers or confined place. Shovel into clean, dry, labeled containers. Flush area with water. Contaminated materials may be dissolved in water, then treated with a reducing agent such as sodium sulphite. Care should be taken while handling contaminated material due to fire risk.

**Waste Disposal:** Consult appropriate Federal, State/Provincial and local regulatory authorities to ascertain proper disposal procedures. Care should be taken not to mix waste Calcium Hypochlorite with incompatible material. Calcium Hypochlorite should be dissolved in water and the available chlorine should be treated using a reducing agent such as Sodium Sulphite.

**14. Transport Information**

**DOT**
- **UN number:** UN3487
- **UN proper shipping name:** Calcium Hypochlorite, Hydrated
- **Hazard Class:** 5.1
- **Subsidiary risk:** 8
- **Packing group:** II
- **USA – EQ, Hazardous Substance and Quantity:** 10 lbs. / 4.5 kg. (Calcium Hypochlorite)
- **Marine Pollutant:** Regular

**ICAO/IATA:**
- **UN number:** UN3487
- **UN proper shipping name:** Calcium Hypochlorite, Hydrated
- **Hazard Class:** 5.1
- **Subsidiary risk:** 8
- **Packing group:** II

**IMDG:**
- **UN number:** UN3487
- **UN proper shipping name:** Calcium Hypochlorite, Hydrated
- **Class:** 5.1
- **Subsidiary risk:** 8
- **Packing group:** II
15. Regulatory information:

EC Labeling Requirements: The product is classified and labeled in accordance with EC directives or respective national laws.

Contains: Calcium Hypochlorite (231-908-7)

Danger Indications:
O – Oxidizing  C – Corrosive  N – Dangerous Environment

R8 – Contact with combustible material may cause fire.
R22 – Harmful if swallowed
R31 – Contact with acids liberates toxic gas
R34 – Causes burns
R50 – Very toxic to aquatic organisms

Safety Phrases:
S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 – In case of accident or if you feel unwell, seek medical advice immediately
S61 – Avoid release to the environment. Refer to special instructions.
S36/37/39 – Wear suitable protective clothing, gloves, and eye/face protection.
S ½ – Keep locked-up and out of the reach of children.

16. Other Information:

Other Information:
UL Drinking Water Treatment Chemicals Listing- calcium hypochlorite is certified for maximum use at 13mg/L under ANSI/NSF Standard 60.

Risk Phrases:
R8 – Contact with combustible material may cause fire.
R22 – Harmful if swallowed
R31 – Contact with acids liberates toxic gas
R34 – Causes burns
R50 – Very toxic to aquatic organisms