

**I - PRODUCT IDENTIFICATION**

Product: DuroKleen 101  
 Chemical Family: Hypochlorite  
 Formula: Not Applicable / Mixture  
 CAS Number: 7778-54-3  
 Synonyms: Calcium Hypochlorite Tablets

**COMPANY IDENTIFICATION**

AllChem Performance Products, LP  
 6010 NW First Place  
 Gainesville, FL 32607  
 Tel: 352-378-9696

**DISTRIBUTED BY:**

APTech Group, Inc.  
 6 Kovach Dr., Suite 612  
 Cincinnati, OH 45215

**24 HR EMERGENCY TELEPHONE NUMBER**

INFOTRAC (Transportation): (800)535-5053

**II – COMPOSITION, INFORMATION ON INGREDIENTS**

**Available chlorine: 65%**

| Chemical or Common Name: |         | Exposure Limits |   |
|--------------------------|---------|-----------------|---|
|                          |         | OSHA PEL:       | ACGIH TLV:  |
| Calcium Hypochlorite     |         |                 |   |
| 7778-54-3                | 60-80%  |                 |   |
| Sodium Chloride          |         |                 |   |
| 7647-14-5                | 10-20%  | NE              | NE  |
| Calcium Chlorate         |         |                 |   |
| 10137-74-3               | 0-5%    | NE              | NE  |
| Calcium Chloride         |         |                 |   |
| 10043-52-4               | 0-5%    | NE              | NE  |
| Calcium Hydroxide        |         |                 |   |
| 1305-62-0                | 0-4%    | None            | 5mg/m3  |
| Calcium Carbonate        |         |                 |   |
| 471-34-1                 | 0-5%    |                 | 10mg/m3<br>15mg/m3 (Total Dust)<br>5mg/m3 (Respirable fraction) |
| Water                    |         |                 |   |
| 7732-18-5                | 5.5-10% | NE              | NE  |

**\*NE- none established**

Calcium hypochlorite, calcium chlorate, calcium chloride, calcium hydroxide and calcium carbonate are hazardous per 29 CFR 1910.1200

**III – HAZARDS IDENTIFICATION**

**WARNING STATEMENT AND WARNING PROPERTIES:** May be fatal if swallowed. Avoid breathing dust or fumes. Harmful if product is inhaled in high concentrations. Causes skin, eye, digestive tract and respiratory tract burns.

Primary Route(s) of Entry:

- Ingestion: (X)
- Inhalation: (X)
- Skin Contact: (X)
- Eye Contact: (X)

Primary Health Hazards (Acute and Chronic):

Human Response Data:

Odor Threshold: Approximately 1.4 mg/cubic-meter, based on odor threshold of chlorine.

Irritation Threshold: Approximately 13-22 mg/cubic-meter, based on the irritation threshold of chlorine.  
Immediately Dangerous to Life or Health: Approximately 45 mg/cubic-meter, based on IDLH Concentration of chlorine.

Carcinogenity Listings:

OSHA: ()

NTP: ()

IARC: ()

Signs & Symptoms of Exposure (Acute and Chronic):

Ingestion:

Acute: Irritation and/or burns can occur to the entire gastrointestinal tract, including the stomach and intestines, characterized by nausea, vomiting, diarrhea, abdominal pain, bleeding and/or tissue ulceration. Due to the corrosive nature of this product, ingestion may be fatal.

Chronic: There are no known or reported effects from chronic exposure except for effects similar to those experienced from single exposure.

Inhalation:

Acute: Inhalation of dust or vapor form this product can be irritating to the nose, mouth, throat and lungs. In confined areas, mechanical agitation can result in high levels of dust, and reaction with incompatible materials can result in high concentrations of chlorine vapor, 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.

Chronic: Chronic (repeated) inhalation exposure may cause impairment of lung function and permanent lung damage.

Skin Contact:

Acute: Dermal exposure can cause sever irritation and/or burns characterized by redness, swelling and scab formation. Prolonged skin exposure may cause permanent damage.

Chronic: Effects from chronic skin exposure would be similar to those from single exposure except for effects secondary to tissue destruction.

Eye Contact: Severe irritation and/or burns can occur following eye exposure. Contact may cause impairment of vision and corneal damage.

Medical Conditions Aggravated By Exposure: Asthma, respiratory and cardiovascular disease.

## **IV – FIRST AID MEASURES**

Emergency and First Aid Procedures:

Ingestion: Immediately drink large quantities of water. Do Not induce vomiting. Call a physician at once. Do Not give anything by mouth if the person is unconscious or if having convulsions.

Inhalation: Remove victim to fresh air. Support respiration if needed. Call a physician.

Skin Contact: Immediately flush with water for at least 15 minutes. Call a physician. If clothing comes in contact with the product, it should be removed immediately and laundered before reuse.

Eye Contact: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

Interactions with other chemicals, which enhance toxicity: None known or reported.

## **V – FIRE FIGHTING MEASURES**

### **FIRE AND EXPLOSION HAZARD DATA**

This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise, may result in a chemical reaction and fire. This product is a strong oxidizer, which is capable of intensifying a fire once started.

Flash Point: (Method Used) Not Applicable

Flammable: No

Combustible: No

Pyrophoric: No

Flammable Limits: At normal atmospheric temperature and pressure (Percent volume in air)

LEL: Not Applicable

UEL: Not Applicable

Auto-ignition Temperature: Not applicable

|               |              |   |
|---------------|--------------|---|
| NFPA Ratings: | HMIS Rating: |   |
| Health:       | 3            | 3 |
| Flammability: | 0            | 0 |
| Reactivity:   | 1            | 1 |

Special Hazard Warning: OX (Oxidizer)

Extinguishing Media: Water Only

Special Fire-fighting Procedures: Do Not Use Dry Extinguishers containing ammonium compounds. Use water to cool containers exposed to fire. Personal Protection for Emergency Spill and Fire-Fighting situations: Response to this material requires the use of full encapsulated suit and NIOSH approved positive pressure supplied air respirator.

Unusual Fire and Explosion Hazards:

**VI – ACCIDENTAL RELEASE MEASURES**

Steps To Be Taken In Case Material Is Spilled Or Released: Spill Mitigation Procedures:

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop sources of spill as soon as possible and notify appropriate personnel.

AIR RELEASE: Vapors may be suppressed by the use of a water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.

WATER RELEASE: This material is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

LAND SPILL: Danger: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction, which may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors.

Place all damaged packaging material in a disposal container of water to assure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled. Call for disposal procedures.

SPILL RESIDUES: Dispose of per guidelines under section XIII: Waste Disposal.

Personal Protection for Emergency Spill and Fire-Fighting situations: Response to this material requires the use of full encapsulated suit and NIOSH approved positive pressure supplied air respirator.

**VII – HANDLING AND STORAGE**

Precautions to Be Taken in Handling and Storage:

Do Not Take Internally. Avoid inhalation of dust and fumes. Avoid contact with eyes, skin or clothing. Upon contact with skin or eyes, wash off with water. Remove and wash contaminated clothing before reuse.

Storage Conditions: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g., 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. Do Not Store At Temperatures above: 35°C (95°F). Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

Other Precautions:

Shelf Life Limitations: Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperature. Do not store product at temperatures above 35°C (95°F). When stored under moderate temperature conditions, product will maintain stated label strength for approximately two years. Prolonged storage at 35°C (95°F) or above will significantly shorten the shelf life. Storage in a climate-controlled storage area or building is recommended in those areas where extremes of high temperatures occur.

Incompatible Materials for Packaging: Product packaging must be clean and free of contamination by other materials, including, e.g., 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.

Incompatible Materials for Storage or Transport: Do not allow product to come in contact with other materials, including, e.g., 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.

**VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION**

Respiratory Protection: Wear NIOSH approved respirator if dusts are created. NIOSH approved full face-piece respirator with chlorine cartridges and dust/mist pre-filter.

Ventilation: Use local exhaust ventilation to minimize dust and chlorine levels where industrial use occurs. Otherwise, ensure good general ventilation.

Other Protective Clothing or Equipment:

Skin and eye protective equipment: Wear gloves, and safety glasses to avoid skin and eye contact. Where industrial use occurs, chemical goggles and/or full impermeable suit may be required. Protective clothing type: Neoprene (this includes: gloves, boots, apron, protective suit)

Work/ Hygienic Practices:

**IX - PHYSICAL/CHEMICAL CHARACTERISTICS**

Boiling Point: Not Applicable

Vapor Pressure (mm Hg): Not Applicable

Vapor Density (Air=1): Not Applicable

Solubility in Water: Approximately 18% @ 25°C (Product also contains calcium hydroxide and calcium carbonate which will leave a residue.)

Appearance and odor: White tablet. Chlorine-like odor.

Specific Gravity (H<sub>2</sub>O=1): Not Applicable

Percent volatile by volume: Not Applicable

Melting Point:

Evaporation Rate: Not Applicable

Freezing Point: Not Applicable

Decomposition Temperature: Onset – Approximately 170-180 °C (338-356°F)

Bulk Density: 1.9 g/cc

pH @ 25°C: 10.4-10.8 (1% solution)

Molecular Weight: 143 (Active ingredient)

Coefficient of oil/water distribution: Not Applicable

**X – STABILITY AND REACTIVITY**

Stability:            () Unstable                    () Stable

Conditions under which this product may be unstable:

Temperatures above: 95°F

Mechanical shock or impact: No

Electrical (static) discharge: No

Incompatibility: This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials.

Hazardous Decomposition or By-Products: Chlorine gas

Hazardous Polymerization:                    () May Occur                    () Will Not Occur

Conditions to Avoid: Storage at temperatures >95°F. Prevent ingress of humidity and moisture into container or package. Always close lid.

Summary of reactivity:

Oxidizer:    Yes

Pyrophoric:                                        No

Organic Peroxide:                                No

Water Reactive: No

Other: This product meets the specifications of ASTM method E-487-74 as set forth in 49 C.F.R. Sec. 173.21, Title 49 – Code of Federal Regs. (Dot Regs.)

## **XI- TOXICOLOGICAL INFORMATION**

Animal Toxicology:

Acute Toxicity:

Inhalation LC50: Approximately 1300 mg/cubic-meter (1 hr., rat) – based on acute inhalation toxicity for chlorine.

Oral LD50: 850 mg/kg. (rat)

Dermal LD50: >2 g/kg. (rabbit)

Causes burns to eyes and skin

Chronic Toxicity: There are no known or reported effects from repeated exposure.

Target Organ Toxicity:

Reproductive and Development Toxicity: Calcium Hypochlorite has been tested for Teratogenicity in laboratory animals. Results of this study have shown that calcium Hypochlorite is not a teratogen.

Carcinogenicity: This product is not known or reported to be carcinogenic by any reference source, including: IARC, OSHA, NTP, OR EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium Hypochlorite. Histopathological examination failed to show an increased incidence of tumors.

IARC (International Agency for Research on Cancer) reviewed studies conducted with several Hypochlorite salts. IARC has classified Hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans.

Mutagenicity: Calcium Hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium Hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In Vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration, which produces mutations in these in vitro assays, is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.

## **XII – ECOLOGICAL INFORMATION**

*Aquatic Toxicity:*

Bluegill, 96 hr. LC50: 0.088 mg/l (nominal, static) R

Rainbow Trout, 96 hr. LC50: 0.16 mg/l (nominal, static)

Daphnia magna, 48 hr. LC50: 0.11 mg/l (nominal, static)

*Avian Toxicity:*

Wildlife Toxicity:

Bobwhite quail, dietary LC50: >5,000 ppm

Mallard ducklings, dietary LC50: >5,000 ppm

Bobwhite quail, oral LD50: 3474 mg/kg.

## **XIII – DISPOSAL CONSIDERATIONS**

Waste Disposal Method: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. Hazardous waste will be subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a Hazardous solid waste, it must be disposed of in accordance with local, state, and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

Care must be taken to prevent environmental contamination for the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non- hazardous wastes.

**XIV - TRANSPORTATION DATA**

Please refer to applicable regulations or call company noted under Section I.

**XV - REGULATORY INFORMATION**

This chemical appears on the following lists:

- (X) SARA Title 3: Hazard Categories, per 40 CFR 370.2:  
Health: Immediate (Acute)  
Physical: Fire and Reactivity
- (X) TSCA

NSF Limits: NSF Drinking Water Treatment Chemicals Listing – DuroKleen 101 is certified for maximum use at 15 mg/L under NSF/ANSI Standard 60  
Emergency Planning and Community right to know, per 40 CFR 355, APP.A:  
Extreme Hazardous Substance – Threshold planning quantity: None established  
Supplier Notification Requirements, per 40 CFR 372.45: None established  
Regulated Under FIFRA, USDA & FDA

**XVI - ADDITIONAL INFORMATION**

This MSDS replaces the no version. Any changes in information are as follows: In Section VII, X.  
**ALWAYS COMPLY WITH ALL APPLICABLE INTERNATIONAL, FEDERAL, STATE AND LOCAL REGULATIONS REGARDING THE TRANSPORTATION, STORAGE, USE AND DISPOSAL OF THIS CHEMICAL.**

Due to the changing nature of regulatory requirements, the REGULATORY INFORMATION listed in Section XV of this document should NOT be considered all-inclusive or authoritative. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements. The information in this MSDS was obtained from sources, which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS.** The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

Issue Date: 04/10/2008  
Ref No: 023APT  
Revision Date:  
Revision No: