



**Arch  
Chemicals,  
Inc.**

**MATERIAL SAFETY  
DATA SHEET**

FOR ANY EMERGENCY, 24 HOURS / 7 DAYS, CALL: 1-800-654-6911  
 FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC®: 1-800-424-9300  
 FOR ALL MSDS QUESTIONS & REQUESTS, CALL: 1-800-511-MSDS

**PRODUCT NAME: SHOCKWAVE™ GRANULAR CALCIUM  
HYPOCHLORITE**

EPA Registration Number: 1258-1069-42177

**1. PRODUCT AND COMPANY IDENTIFICATION**

Arch Chemicals, Inc.  
501 Merritt 7 PO Box 5204  
Norwalk, CT 06856-5204

REVISION DATE: 01/25/2007  
SUPERCEDES:

MSDS Number: 000000003523  
 SYNONYMS: None  
 CHEMICAL FAMILY: Hypochlorite  
 DESCRIPTION / USE: Sanitizer and Oxidizer  
 FORMULA: NOT APPLICABLE/MIXTURE

**2. HAZARDS IDENTIFICATION**

OSHA Hazard  
Classification:

**Oxidizer, Toxic by inhalation., Corrosive, Eye and skin hazard, Lung toxin**

Routes of Entry: Inhalation, skin, eyes, ingestion  
 Chemical Interactions: No known or reported interactions.  
 Medical Conditions Aggravated: Asthma, respiratory and cardiovascular disease

Human Threshold Response Data

Odor Threshold Approximately 1.4 mg/m3 (based on odor threshold of chlorine)

Irritation Threshold Approximately 13-22 mg/m3 (based on irritation threshold of chlorine)

**Hazardous Materials Identification System / National Fire Protection Association Classifications**

| <u>Hazard Ratings :</u> | <u>Health</u> | <u>Flammability</u> | <u>Physical / Instability</u> | <u>PPI / Special hazard.</u> |
|-------------------------|---------------|---------------------|-------------------------------|------------------------------|
| HMIS                    | 3             | 0                   | 1                             |                              |
| NFPA                    | 3             | 0                   | 1                             | OX                           |



Immediate (Acute) Health Effects

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Toxicity: | HARMFUL IF PRODUCT IS INHALED IN HIGH CONCENTRATIONS. CAUSES BURNS TO RESPIRATORY TRACT. Inhalation of dust or vapor from 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 (as listed in Section 10) 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. |
| Skin Toxicity:       | CAUSES SKIN BURNS. Dermal exposure can cause severe irritation and/or burns characterized by redness, swelling, and scab formation. Prolonged skin exposure may cause permanent damage.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Eye Toxicity:        | CAUSES BURNS TO EYES. Severe irritation and/or burns can occur following eye exposure. Direct contact may cause impairment of vision and corneal damage.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Ingestion Toxicity:  | MAY BE FATAL IF SWALLOWED. CAUSES BURNS TO DIGESTIVE TRACT. 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 or perforation. Due to the corrosive nature of this product, ingestion may be fatal.                                                                                                                                                                                                                                             |

Prolonged (Chronic) Health Effects

|                                          |                                                                                                                                           |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation:                              | Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.                                             |
| Skin Contact:                            | Effects similar to those from acute exposure. Effects secondary to tissue destruction may also occur upon prolonged or repeated exposure. |
| Ingestion:                               | There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.       |
| Chronic Target Organ Toxicity:           | None known                                                                                                                                |
| Supplemental Health Hazard Information : | No additional health information available.                                                                                               |

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>CAS OR CHEMICAL NAME</u> | <u>CAS #</u> | <u>% RANGE</u> |
|-----------------------------|--------------|----------------|
| CALCIUM HYPOCHLORITE        | 7778-54-3    | 60 - 80        |
| SODIUM CHLORIDE             | 7647-14-5    | 10 - 20        |
| CALCIUM CHLORATE            | 10137-74-3   | 0 - 5          |
| CALCIUM CHLORIDE            | 10043-52-4   | 0 - 5          |

|                   |           |          |
|-------------------|-----------|----------|
| CALCIUM HYDROXIDE | 1305-62-0 | 0 - 4    |
| CALCIUM CARBONATE | 471-34-1  | 0 - 5    |
| Water             | 7732-18-5 | 5.5 - 10 |

## 4. FIRST AID MEASURES

|                     |                                                                                                                                                                                                                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation:         | IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.                                             |
| Skin Contact:       | IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.                                                                                                   |
| Eye Contact:        | IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.                                             |
| Ingestion:          | IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. |
| Notes to Physician: | Probable mucosal damage may contraindicate the use of gastric lavage.                                                                                                                                                                                                                 |

## 5. FIRE FIGHTING MEASURES

|                                              |                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Flammability Summary (OSHA):                 | 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., Product is not known to be flammable, combustible or pyrophoric. |
| <b>Flammable Properties</b>                  |                                                                                                                                                                                                                                                                                                                                               |
| Flash Point:                                 | Not applicable                                                                                                                                                                                                                                                                                                                                |
| Autoignition Temperature:                    | Not applicable                                                                                                                                                                                                                                                                                                                                |
| Extinguishing Media:                         | Water only. Do not use dry extinguishers containing ammonium compounds.                                                                                                                                                                                                                                                                       |
| Fire Fighting Instructions:                  | Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.                                                                                                                                                                                                                                       |
| Upper Flammable / Explosive Limit, % in air: | Not applicable                                                                                                                                                                                                                                                                                                                                |
| Lower Flammable / Explosive Limit, % in air: | Not applicable                                                                                                                                                                                                                                                                                                                                |



## 6. ACCIDENTAL RELEASE MEASURES

---

**Personal Protection for Emergency Situations:**

Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.

Spill Mitigation Procedures

**Air Release:**

Vapors may be suppressed by the use of 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 product 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 Release:**

Contact at 1-800-6546-911 immediately. DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that 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.

**Additional Spill Information :**

Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. This material may be neutralized for disposal; you are requested to contact Arch Chemicals at 1-800-654-6911 before beginning any such procedure. FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300 REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

## 7. HANDLING AND STORAGE

---

**Handling:**

Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.



|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage:                            | 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.                                                                                                                                                                                                                                           |
| 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 temperatures. Do not store product at temperatures above 52 Deg.C (125 Deg.F). Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. When stored under moderate temperature conditions, product will maintain stated label strength for approximately two years. Prolonged storage at 35 Deg.C (95 Deg.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 temperature occur. |
| Incompatible Materials for Storage: | 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.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Do Not Store At temperatures Above: | Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. 52 °C / 125 °F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

### Protective Equipment for Routine Use of Product

|                           |                                                                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Respiratory Protection :  | Wear a NIOSH approved respirator if dusts are created. NIOSH approved full face piece air-purifying respirator with chlorine cartridges and dust/mist prefilter. |
| Skin Protection :         | Wear impervious gloves to avoid skin contact. Where industrial use occurs, full impermeable suit may be required.                                                |
| Eye Protection:           | Use safety glasses with side shields. Where industrial use occurs, chemical goggles may be required.                                                             |
| Protective Clothing Type: | Neoprene (This includes: gloves, boots, apron, protective suit)                                                                                                  |

### Exposure Limit Data

| <u>CHEMICAL NAME</u> | <u>CAS #</u> | <u>Name of Limit</u> | <u>Exposure</u>                                                      |
|----------------------|--------------|----------------------|----------------------------------------------------------------------|
| CALCIUM HYPOCHLORITE | 7778-54-3    | ARCH-ROEG*           | 1 mg/m3 TWA                                                          |
| CALCIUM HYPOCHLORITE | 7778-54-3    | NIOSH-IDLH           | 37 - 48 mg/m3 based on IDLH concentration of chlorine<br>5 mg/m3 TWA |
| CALCIUM HYDROXIDE    | 1305-62-0    | ACGIH                |                                                                      |



|                   |           |         |                                                                                                     |
|-------------------|-----------|---------|-----------------------------------------------------------------------------------------------------|
| CALCIUM HYDROXIDE | 1305-62-0 | OSHA Z1 | 5 mg/m3 PEL Respirable fraction.                                                                    |
| CALCIUM HYDROXIDE | 1305-62-0 | OSHA Z1 | 15 mg/m3 PEL Total dust.                                                                            |
| CALCIUM CARBONATE | 471-34-1  | ACGIH   | 10 mg/m3 TWA The value is for particulate matter containing no asbestos and <1% crystalline silica. |
| CALCIUM CARBONATE | 471-34-1  | OSHA Z1 | 15 mg/m3 PEL Total dust.                                                                            |
| CALCIUM CARBONATE | 471-34-1  | OSHA Z1 | 5 mg/m3 PEL Respirable fraction.                                                                    |

\*ARCH-ROEG: Arch Recommended Occupational Exposure Guideline.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|                                        |                                                                                                              |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Physical State:                        | solid                                                                                                        |
| Form                                   | Free flowing, powder                                                                                         |
| Color:                                 | white                                                                                                        |
| Odor:                                  | Chlorine-like                                                                                                |
| Molecular Weight:                      | (Active ingredient)143.00                                                                                    |
| Specific Gravity :                     | Not applicable                                                                                               |
| pH :                                   | 10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)                                          |
| Boiling Point:                         | Not applicable                                                                                               |
| Freezing Point:                        | Not applicable                                                                                               |
| Melting Point:                         | Not applicable                                                                                               |
| Density:                               | 0.8g/cc                                                                                                      |
| Vapor Pressure:                        | (@ 25 Deg. C) Not applicable                                                                                 |
| Vapor Density:                         | Not applicable                                                                                               |
| Viscosity:                             | Not applicable                                                                                               |
| Fat Solubility:                        | No data                                                                                                      |
| Solubility in Water:                   | 18 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue. |
| Partition coefficient n-octanol/water: | No data                                                                                                      |
| Evaporation Rate:                      | Not applicable                                                                                               |
| Oxidizing:                             | None established                                                                                             |
| Volatiles, % by vol.:                  | Not applicable                                                                                               |
| VOC Content                            | Not applicable                                                                                               |
| HAP Content                            | Not applicable                                                                                               |

## 10. STABILITY AND REACTIVITY

|                                   |                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stability and Reactivity Summary: | Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an oxidizer. Not pyrophoric. Not an organic peroxide. Not water reactive. Arch calcium hypochlorite products meet the specifications of ASTM method E-487-74 as set forth in 49 CFR 173.21. |
| Conditions to Avoid:              | May be unstable at temperatures above 170 Deg. C (338 Deg. F), Avoid storage at temperatures above 52° C (125° F)., Prevent                                                                                                                                                                                                                                                |



Chemical Incompatibility: ingress of humidity and moisture into container or package.  
Always close the lid.  
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 Products: Chlorine

Decomposition Temperature: 170 °C - 180 °C , 338 °F- 356 °F

## 11. TOXICOLOGICAL INFORMATION

### Component Animal Toxicology

#### Oral LD50 value:

|                         |                                 |               |     |
|-------------------------|---------------------------------|---------------|-----|
| CALCIUM<br>HYPOCHLORITE | LD50 (65% calcium hypochlorite) | 850 mg/kg     | Rat |
| SODIUM CHLORIDE         | LD50                            | = 3,000 mg/kg | Rat |
| CALCIUM CHLORIDE        | LD50                            | = 1,000 mg/kg | Rat |

#### Dermal LD50 value:

|                         |                                 |                |        |
|-------------------------|---------------------------------|----------------|--------|
| CALCIUM<br>HYPOCHLORITE | LD50 (65% calcium hypochlorite) | > 2,000 mg/kg  | Rabbit |
| SODIUM CHLORIDE         | LD50                            | > 10,000 mg/kg | Rabbit |
| CALCIUM CHLORIDE        | LD50                            | = 2,630 mg/kg  | Rat    |

#### Inhalation LC50 value:

|                         |                                                                |             |     |
|-------------------------|----------------------------------------------------------------|-------------|-----|
| CALCIUM<br>HYPOCHLORITE | Inhalation LC50 1 HOUR (65% calcium hypochlorite), (Nose Only) | = 2.04 MG/L | Rat |
| CALCIUM<br>HYPOCHLORITE | Inhalation LC50 4 HOUR (65% calcium hypochlorite), (Nose Only) | = 0.51 MG/L | Rat |
| SODIUM CHLORIDE         | Inhalation LC50 1 HOUR                                         | > 42 MG/L   | Rat |
| CALCIUM CHLORIDE        | No data                                                        |             |     |

### Product Animal Toxicity

Oral LD50 value: LD50 850 mg/kg Rat

Dermal LD50 value: LD50 CAUSES BURNS TO EYES AND SKIN. > 2,000 mg/kg Rabbit

Inhalation LC50 value: LC50 1.00 HOUR Based on the acute inhalation toxicity for chlorine.  
Approximately 1.3 MG/L Rat

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

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

CALCIUM CHLORIDE

Not known or reported to cause reproductive or developmental toxicity.

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.

**CALCIUM CHLORIDE**

This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non-clastogenic in the chromosomal aberration test.

**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 (Group 3 Substance).

**CALCIUM CHLORIDE**

This chemical is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

## **12. ECOLOGICAL INFORMATION**

**Ecological Toxicity Values for: CALCIUM HYPOCHLORITE**

|                                           |   |                                            |
|-------------------------------------------|---|--------------------------------------------|
| Bluegill                                  | - | (nominal, static). 96 HOUR LC50 0.088 mg/l |
| Rainbow trout ( <i>Salmo gairdneri</i> ), | - | (nominal, static). 96 HOUR LC50 0.16 mg/l  |
| Daphnia magna,                            | - | (nominal, static). 48 HOUR LC50 0.11 mg/l  |
| Bobwhite quail                            | - | Dietary LC50 > 5,000 ppm                   |
| Mallard ducklings                         | - | Dietary LC50 > 5,000 ppm                   |
| Bobwhite quail                            | - | Oral LD50 3,474 mg/kg                      |

**Ecological Toxicity Values for: CALCIUM CHLORIDE**

|                                                |   |                                               |
|------------------------------------------------|---|-----------------------------------------------|
| Bluegill                                       | - | (nominal, static). 96 HOUR LC50 = 10,650 mg/l |
| Mosquito fish                                  | - | (nominal, static). 96 HOUR LC50 = 13,400 mg/l |
| Fathead minnow ( <i>Pimephales promelas</i> ), | - | (nominal, static). 96 HOUR LC50 = 4,630 mg/l  |
| Daphnia magna,                                 | - | (nominal, static). 48 HOUR LC50= 2,770 mg/l   |
| Ceriodaphnia dubia                             | - | (nominal, static). 48 HOUR LC50= 1,830 mg/l   |
| Nitzschia linearis (diatom)                    | - | (nominal, static). 5 day LC50 = 3,130 mg/l    |



## 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE 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 NONHAZARDOUS WASTES.

Waste Disposal Summary : 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. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes : D001

## 14. TRANSPORT INFORMATION

Land (US DOT): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE 5.1 II  
Water (IMDG): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II

Flash Point: Not applicable  
Air (IATA): UN2880 CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, 5.1 II  
Emergency Response Guide Number: ERG # 140

Transportation Notes: THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL. HAZARD LABEL/PLACARD: OXIDIZER  
REPORTABLE QUANTITY: 10 lbs. (Per 49 CFR 172.101, Appendix) Under specific circumstances, this product can ship under two transport exceptions, Limited Quantity or Consumer Commodity. See Bill of Lading for proper shipping description.

## 15. REGULATORY INFORMATION

### UNITED STATES:

Toxic Substances Control Act (TSCA): This is an EPA registered pesticide.  
EPA Pesticide Registration Number: 1258-1069-42177

FIFRA Listing of Pesticide Chemicals (40 CFR 180): This product is regulated under the Federal Insecticide, Fungicide and Rodenticide Act. It must be used for purposes consistent with its labeling.

### Superfund Amendments and Reauthorization Act (SARA) Title III:

Hazard Categories Sections 311 / 312 (40 CFR 370.2):  
Health Immediate (Acute) Health Hazard  
Physical Fire and Reactivity

**Emergency Planning & Community Right to Know (40 CFR 355, App. A):**

**Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:**

SARA III      Threshold Planning Quantity:      None established

**Reportable Quantity (49 CFR 172.101, Appendix):**

CERCLA      Reportable quantity:      CALCIUM HYPOCHLORITE  
Value: 10lbs

SARA III      Reportable quantity:      None established

**Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components**

SARA III      De minimis concentration:      None established

**Clean Air Act Toxic ARP Section 112r:**

CAA 112R      None established

**Clean Air Act Socmi:**

HON SOC      None established

**Clean Air Act VOC Section 111:**

CAA 111      None established

**Clean Air Act Haz. Air Pollutants Section 112:**

CAA      None established

CAA 112I      None established

CAA AP      None established

**State Right-to-Know Regulations Status of Ingredients  
Pennsylvania:**

| CAS #      | COMPONENT NAME       |
|------------|----------------------|
| 10137-74-3 | CALCIUM CHLORATE     |
| 1305-62-0  | CALCIUM HYDROXIDE    |
| 7778-54-3  | CALCIUM HYPOCHLORITE |

PENN RTK

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

PENN RTK  
08 1989  
CHLORIC ACID, CALCIUM SALT

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

PENN RTK  
08 1989  
CALCIUM HYDROXIDE (CA(OH)<sub>2</sub>)

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

PENN RTK



**Arch  
Chemicals,  
Inc.**

**MATERIAL SAFETY  
DATA SHEET**

08 1989  
HYPOCHLOROUS ACID, CALCIUM SALT

**New Jersey:**

| CAS #      | COMPONENT NAME    |
|------------|-------------------|
| 10137-74-3 | CALCIUM CHLORATE  |
| 1305-62-0  | CALCIUM HYDROXIDE |

NJ RTK

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

NJ RTK  
12 1989  
Substance no. 0313  
CALCIUM CHLORATE CHLORIC ACID, CALCIUM SALT

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

NJ RTK  
12 1989  
Substance no. 0322  
CALCIUM HYDROXIDE

**Massachusetts:**

| CAS #      | COMPONENT NAME       |
|------------|----------------------|
| 10137-74-3 | CALCIUM CHLORATE     |
| 1305-62-0  | CALCIUM HYDROXIDE    |
| 7778-54-3  | CALCIUM HYPOCHLORITE |

MASS RTK

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK  
04 1993  
CALCIUM CHLORATE

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK  
04 1993  
CALCIUM HYDROXIDE

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

MASS RTK  
04 1993  
CALCIUM HYPOCHLORITE

**California Proposition 65:**

| CAS # | COMPONENT NAME |
|-------|----------------|
|-------|----------------|



**Arch  
Chemicals,  
Inc.**

## MATERIAL SAFETY DATA SHEET

US CA CRT                      None established

US CA65CRT                      None established

### **WHMIS Hazard Classification:** WHMIS

Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)

WHMIS  
01 1988  
Threshold limits: 1%  
English List no. 302  
CALCIUM HYDROXIDE

## **16. OTHER INFORMATION**

MSDS REVISION STATUS :      Revised to meet the ANSI standard of 16 sections  
Major References :              Available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT. .



# SAFETY DATA SHEET

361006

## 1. Identification

|                                                        |                                                                |                 |  |
|--------------------------------------------------------|----------------------------------------------------------------|-----------------|--|
| Product identifier                                     | Re-Fresh® Dry Chlorinating Granular                            |                 |  |
| Other means of identification                          |                                                                |                 |  |
| Product code                                           | W8000008, W8000116, W8000207, W8000392                         |                 |  |
| Product registration number                            | EPA Registration Number: 748-217-42177                         |                 |  |
| Recommended use                                        | Chlorine Disinfectant.                                         |                 |  |
| Recommended restrictions                               | None known.                                                    |                 |  |
| Manufacturer/Importer/Supplier/Distributor information |                                                                |                 |  |
| Manufacturer                                           |                                                                |                 |  |
| Company name                                           | Westlake Corporation                                           |                 |  |
| Address                                                | 2801 Post Oak, Suite 600<br>Houston, TX 77056<br>United States |                 |  |
| Telephone                                              | +1-713-960-9111                                                |                 |  |
| Website                                                | www.westlake.com                                               |                 |  |
| E-mail                                                 | sdsinfo@westlake.com                                           |                 |  |
| Emergency phone number                                 | CHEMTREC                                                       | 1-800-424-9300  |  |
|                                                        | CHEMTREC International                                         | +1 703-741-5970 |  |
|                                                        | Health & Safety Emergency                                      | +1 304-455-6882 |  |

## 2. Hazard(s) identification

|                             |                                                 |                                         |
|-----------------------------|-------------------------------------------------|-----------------------------------------|
| <b>Physical hazards</b>     | Oxidizing solids                                | Category 2                              |
| <b>Health hazards</b>       | Acute toxicity, oral                            | Category 4                              |
|                             | Skin corrosion/irritation                       | Category 1                              |
|                             | Serious eye damage/eye irritation               | Category 1                              |
|                             | Specific target organ toxicity, single exposure | Category 3 respiratory tract irritation |
| <b>OSHA defined hazards</b> | Not classified.                                 |                                         |

### Label elements



|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Signal word</b>             | Danger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Hazard statement</b>        | May intensify fire; oxidizer. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation.                                                                                                                                                                                                                                                                                                                                                               |
| <b>Precautionary statement</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Prevention</b>              | Keep away from heat. Keep/Store away from clothing/combustible materials. Take any precaution to avoid mixing with combustibles. Avoid breathing vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.                                                                                                                                                 |
| <b>Response</b>                | Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish. |
| <b>Storage</b>                 | Store in a well-ventilated place. Keep container tightly closed. Store locked up.                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Disposal</b>                | Dispose of contents/container in accordance with local/regional/national/international regulations.                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Hazard(s) not otherwise classified (HNOC)**

None known.

**Supplemental information**

1.5% of the mixture consists of component(s) of unknown acute dermal toxicity.

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name        | Common name and synonyms | CAS number | %       |
|----------------------|--------------------------|------------|---------|
| Calcium Hypochlorite |                          | 7778-54-3  | 65 - 73 |
| Calcium Carbonate    |                          | 471-34-1   | 1 - 5   |
| Calcium Chlorate     |                          | 10137-74-3 | 1 - 5   |
| Calcium Hydroxide    |                          | 1305-62-0  | 1 - 5   |

### 4. First-aid measures

#### Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### Skin contact

If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

#### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

#### Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

#### Most important symptoms/effects, acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.

#### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

#### General information

Take off all contaminated clothing immediately. Contact with combustible material may cause fire. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

### 5. Fire-fighting measures

#### Suitable extinguishing media

Drench with large quantities of water only.

#### Unsuitable extinguishing media

Do not use dry chemicals or foams. Product supplies own oxygen, therefore attempts to smother fire with a wet blanket, carbon dioxide, dry chemical extinguisher or other means are not effective. Product has the potential to cause a violent reaction if dry chemical fire extinguishers are used.

#### Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed. Greatly increases the burning rate of combustible materials. Containers may explode when heated. Emits toxic fumes under fire conditions. Chlorine gas may be generated. Runoff may create fire or explosion hazard. Some will react explosively with hydrocarbons (fuels).

#### Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

#### Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

#### Specific methods

Cool containers exposed to flames with water until well after the fire is out.

#### General fire hazards

May intensify fire; oxidizer. Contact with combustible material may cause fire.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep away from clothing and other combustible materials. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Do not mix this product with any other chemicals, including any other pool chemicals of any kind, such as other disinfection or "shock" pool products. Contamination with moisture, acids, organic matter, other chemicals (including, but not limited to cleaning chemicals and other pool chemicals), petroleum or paint products or other easily combustible materials may start a chemical reaction with generation of heat, liberation of hazardous gases and possible violent reaction leading to fire or explosion. See Section 8 of the SDS for Personal Protective Equipment.

### Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate the contaminated area. Minimize dust generation and accumulation. Wear appropriate protective equipment and clothing during clean-up. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

### Environmental precautions

## 7. Handling and storage

### Precautions for safe handling

Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Keep away from heat. Take any precaution to avoid mixing with combustibles. Keep away from clothing and other combustible materials. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices. Do not mix this product with any other chemicals, including any other pool chemicals of any kind, such as other disinfection or "shock" pool products. Contamination with moisture, acids, organic matter, other chemicals (including, but not limited to cleaning chemicals and other pool chemicals), petroleum or paint products or other easily combustible materials may start a chemical reaction with generation of heat, liberation of hazardous gases and possible violent reaction leading to fire or explosion. Always add product to large quantities of water to fully dissolve product. Do not pour water into product, always add product to water. Do not use with stabilized chlorine or bromine tablet chemical feeders. Do not add this product to any dispensing device containing remnants of any other product or pool chemical.

### Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Do not store near combustible materials. Store away from incompatible materials (see Section 10 of the SDS). Product is an NFPA Class 3 Oxidizer which can cause a severe increase in fire intensity.

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components                        | Type | Value    | Form                 |
|-----------------------------------|------|----------|----------------------|
| Calcium Hydroxide (CAS 1305-62-0) | PEL  | 5 mg/m3  | Respirable fraction. |
|                                   |      | 15 mg/m3 | Total dust.          |

#### US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components                       | Type | Value    | Form                 |
|----------------------------------|------|----------|----------------------|
| Calcium Carbonate (CAS 471-34-1) | TWA  | 5 mg/m3  | Respirable fraction. |
|                                  |      | 15 mg/m3 | Total dust.          |

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

| Components                        | Type | Value    | Form                 |
|-----------------------------------|------|----------|----------------------|
| Calcium Hydroxide (CAS 1305-62-0) | TWA  | 50 mppcf | Total dust.          |
|                                   |      | 15 mppcf | Respirable fraction. |
|                                   |      | 5 mg/m3  | Respirable fraction. |
|                                   |      | 15 mg/m3 | Total dust.          |
|                                   |      | 50 mppcf | Total dust.          |
|                                   |      | 15 mppcf | Respirable fraction. |

**US. ACGIH Threshold Limit Values**

| Components                        | Type | Value   |
|-----------------------------------|------|---------|
| Calcium Hydroxide (CAS 1305-62-0) | TWA  | 5 mg/m3 |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components                        | Type | Value    | Form        |
|-----------------------------------|------|----------|-------------|
| Calcium Carbonate (CAS 471-34-1)  | TWA  | 5 mg/m3  | Respirable. |
| Calcium Hydroxide (CAS 1305-62-0) | TWA  | 10 mg/m3 | Total       |
|                                   |      | 5 mg/m3  |             |

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection**

**Hand protection** Wear appropriate chemical resistant gloves. Frequent change is advisable.

**Other** Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection** Chemical respirator with organic vapor cartridge.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**
**Appearance**

**Physical state** Solid.

**Form** Granular.

**Color** White

**Odor** Chlorine-like

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Upper/lower flammability or explosive limits****Explosive limit - lower (%)** Not available.**Explosive limit - upper (%)** Not available.**Vapor pressure** Not available.**Vapor density** Not available.**Relative density** Not available.**Solubility(ies)****Solubility (water)** 100 %**Partition coefficient  
(n-octanol/water)** Not available.**Auto-ignition temperature** Not available.**Decomposition temperature** 338 - 356 °F (170 - 180 °C)**Viscosity** Not available.**Other information****Bulk density** 1 - 1.07 g/cm<sup>3</sup>**Explosive properties** Not explosive.**Oxidizing properties** May intensify fire; oxidizer.**10. Stability and reactivity****Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.**Chemical stability** Product decomposes at approximately 170-180°C (338-356°F) releasing oxygen gas and some chlorine gas.**Possibility of hazardous reactions** Hazardous polymerization does not occur.**Conditions to avoid** Heat. Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.**Incompatible materials** Highly reactive or incompatible with the following materials: moisture, combustible materials, organic materials, metals, acids, alkalis, oxidizing materials, reducing materials, ammonia, petroleum products, paint products, wood and paper, and pool chemicals. Acid or ammonia contamination will release toxic gases.**Hazardous decomposition products** Chlorine.**11. Toxicological information****Information on likely routes of exposure****Inhalation** May cause irritation to the respiratory system. Prolonged inhalation may be harmful.**Skin contact** Causes severe skin burns.**Eye contact** Causes serious eye damage.**Ingestion** Causes digestive tract burns. Harmful if swallowed.**Symptoms related to the physical, chemical and toxicological characteristics** Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.**Information on toxicological effects****Acute toxicity** In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Harmful if swallowed.

| Components                       | Species | Test Results           |
|----------------------------------|---------|------------------------|
| Calcium Carbonate (CAS 471-34-1) |         |                        |
| <b><u>Acute</u></b>              |         |                        |
| <b>Dermal</b>                    |         |                        |
| LD50                             | Rat     | > 2000 mg/kg, 24 Hours |
| <b>Oral</b>                      |         |                        |
| LD50                             | Rat     | > 2000 mg/kg           |

| Components                                                            | Species                                                                                                          | Test Results                                        |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Calcium Hydroxide (CAS 1305-62-0)                                     |                                                                                                                  |                                                     |
| <u>Acute</u>                                                          |                                                                                                                  |                                                     |
| <b>Dermal</b>                                                         |                                                                                                                  |                                                     |
| LD50                                                                  | Rabbit                                                                                                           | > 2500 mg/kg, 24 Hours                              |
| <b>Oral</b>                                                           |                                                                                                                  |                                                     |
| LD50                                                                  | Rat                                                                                                              | 7340 mg/kg                                          |
| Calcium Hypochlorite (CAS 7778-54-3)                                  |                                                                                                                  |                                                     |
| <u>Acute</u>                                                          |                                                                                                                  |                                                     |
| <b>Dermal</b>                                                         |                                                                                                                  |                                                     |
| LD50                                                                  | Rabbit                                                                                                           | > 2000 mg/kg                                        |
| <b>Oral</b>                                                           |                                                                                                                  |                                                     |
| LD50                                                                  | Rat                                                                                                              | 850 mg/kg                                           |
| <b>Skin corrosion/irritation</b>                                      | Causes severe skin burns and eye damage.                                                                         |                                                     |
| <b>Serious eye damage/eye irritation</b>                              | Causes serious eye damage.                                                                                       |                                                     |
| <b>Respiratory or skin sensitization</b>                              |                                                                                                                  |                                                     |
| <b>Respiratory sensitization</b>                                      | Not a respiratory sensitizer.                                                                                    |                                                     |
| <b>Skin sensitization</b>                                             | This product is not expected to cause skin sensitization.                                                        |                                                     |
| <b>Germ cell mutagenicity</b>                                         | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |                                                     |
| <b>Carcinogenicity</b>                                                | Not classifiable as to carcinogenicity to humans.                                                                |                                                     |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>         |                                                                                                                  |                                                     |
| Calcium Hypochlorite (CAS 7778-54-3)                                  |                                                                                                                  | 3 Not classifiable as to carcinogenicity to humans. |
| <b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)</b> |                                                                                                                  |                                                     |
| Not listed.                                                           |                                                                                                                  |                                                     |
| <b>US. National Toxicology Program (NTP) Report on Carcinogens</b>    |                                                                                                                  |                                                     |
| Not listed.                                                           |                                                                                                                  |                                                     |
| <b>Reproductive toxicity</b>                                          | This product is not expected to cause reproductive or developmental effects.                                     |                                                     |
| <b>Specific target organ toxicity - single exposure</b>               | May cause respiratory irritation.                                                                                |                                                     |
| <b>Specific target organ toxicity - repeated exposure</b>             | Not classified.                                                                                                  |                                                     |
| <b>Aspiration hazard</b>                                              | Not an aspiration hazard.                                                                                        |                                                     |
| <b>Chronic effects</b>                                                | Prolonged inhalation may be harmful.                                                                             |                                                     |

## 12. Ecological information

| <b>Ecotoxicity</b>                   | The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. |                                                                         |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Components                           | Species                                                                                                                                                                                            | Test Results                                                            |
| Calcium Carbonate (CAS 471-34-1)     |                                                                                                                                                                                                    |                                                                         |
| <b>Aquatic</b>                       |                                                                                                                                                                                                    |                                                                         |
| <i>Acute</i>                         |                                                                                                                                                                                                    |                                                                         |
| Fish                                 | LC50                                                                                                                                                                                               | Western mosquitofish ( <i>Gambusia affinis</i> ) > 56000 mg/l, 96 hours |
| Calcium Hydroxide (CAS 1305-62-0)    |                                                                                                                                                                                                    |                                                                         |
| <b>Aquatic</b>                       |                                                                                                                                                                                                    |                                                                         |
| <i>Acute</i>                         |                                                                                                                                                                                                    |                                                                         |
| Fish                                 | LC50                                                                                                                                                                                               | Zambezi barbel ( <i>Clarias gariepinus</i> ) 33.8844 mg/l, 96 hours     |
| Calcium Hypochlorite (CAS 7778-54-3) |                                                                                                                                                                                                    |                                                                         |
| <b>Aquatic</b>                       |                                                                                                                                                                                                    |                                                                         |
| <i>Acute</i>                         |                                                                                                                                                                                                    |                                                                         |
| Crustacea                            | EC50                                                                                                                                                                                               | Rotifer ( <i>Philodina acuticornis</i> ) 0.07 mg/l, 48 hours            |

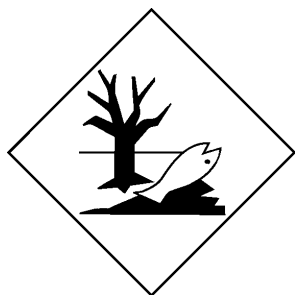
| Components                           | Species                                                                                                                                                                                 | Test Results                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Fish                                 | LC50                                                                                                                                                                                    | Channel catfish ( <i>Ictalurus punctatus</i> ) |
|                                      |                                                                                                                                                                                         | >= 0.027 - <= 0.137 mg/l, 96 hours             |
| <b>Persistence and degradability</b> | No data is available on the degradability of any ingredients in the mixture.                                                                                                            |                                                |
| <b>Bioaccumulative potential</b>     |                                                                                                                                                                                         |                                                |
| <b>Mobility in soil</b>              | No data available.                                                                                                                                                                      |                                                |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |                                                |

### 13. Disposal considerations

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Disposal instructions</b>                 | Dispose of this material and its container to hazardous or special waste collection point. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Hazardous waste code</b>                  | D001: Waste Flammable material with a flash point <140 F<br>D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). 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. If this is not possible, material may be neutralized. Please contact Westlake Corporation Emergency Response team for guidance at +1 (304) 455-6882. Unneutralized material can cause environmental damage to any receiving water or can interfere with treatment plant operation. |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

### 14. Transport information

|                                     |                                                                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DOT</b>                          |                                                                                                                                                                                       |
| <b>UN number</b>                    | UN2880                                                                                                                                                                                |
| <b>UN proper shipping name</b>      | Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 % but not more than 16 % water (Calcium Hypochlorite RQ = 15 LBS), MARINE POLLUTANT |
| <b>Transport hazard class(es)</b>   |                                                                                                                                                                                       |
| <b>Class</b>                        | 5.1                                                                                                                                                                                   |
| <b>Subsidiary risk</b>              | -                                                                                                                                                                                     |
| <b>Label(s)</b>                     | 5.1                                                                                                                                                                                   |
| <b>Packing group</b>                | II                                                                                                                                                                                    |
| <b>Environmental hazards</b>        |                                                                                                                                                                                       |
| <b>Marine pollutant</b>             | Yes                                                                                                                                                                                   |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.                                                                                                               |
| <b>Special provisions</b>           | 165, IB8, IP2, IP4, IP13, W9                                                                                                                                                          |
| <b>Packaging exceptions</b>         | 152                                                                                                                                                                                   |
| <b>Packaging non bulk</b>           | 212                                                                                                                                                                                   |
| <b>Packaging bulk</b>               | 240                                                                                                                                                                                   |
| <b>IATA</b>                         |                                                                                                                                                                                       |
| <b>UN number</b>                    | UN2880                                                                                                                                                                                |
| <b>UN proper shipping name</b>      | Calcium hypochlorite, hydrated with >= 5.5% but <= 16% water                                                                                                                          |
| <b>Transport hazard class(es)</b>   |                                                                                                                                                                                       |
| <b>Class</b>                        | 5.1                                                                                                                                                                                   |
| <b>Subsidiary risk</b>              | -                                                                                                                                                                                     |
| <b>Packing group</b>                | II                                                                                                                                                                                    |
| <b>Environmental hazards</b>        | Yes                                                                                                                                                                                   |
| <b>ERG Code</b>                     | 5L                                                                                                                                                                                    |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling.                                                                                                               |
| <b>Other information</b>            |                                                                                                                                                                                       |
| <b>Passenger and cargo aircraft</b> | Allowed with restrictions.                                                                                                                                                            |
| <b>Cargo aircraft only</b>          | Allowed with restrictions.                                                                                                                                                            |
| <b>IMDG</b>                         |                                                                                                                                                                                       |
| <b>UN number</b>                    | UN2880                                                                                                                                                                                |
| <b>UN proper shipping name</b>      | CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water, MARINE POLLUTANT                                        |

**Transport hazard class(es)****Class** 5.1**Subsidiary risk** -**Packing group** II**Environmental hazards****Marine pollutant** Yes**EmS** F-H, S-Q**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.**Transport in bulk according to** Not applicable.**Annex II of MARPOL 73/78 and  
the IBC Code****DOT****IATA; IMDG****Marine pollutant****General information**

IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

**15. Regulatory information****US federal regulations**

This is a pesticide product registered with the Environmental Protection Agency and is regulated under FIFRA. Pesticide products are exempt from TSCA and not subject to inventory requirements. This chemical is a pesticide product registered with the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

**Toxic Substances Control Act (TSCA)**

All components of the mixture on the TSCA 8(b) inventory are designated "active" or exempt.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Calcium Hypochlorite (CAS 7778-54-3)

Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Oxidizer (liquid, solid, or gas)  
Acute toxicity (any route of exposure)  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Safe Drinking Water Act (SDWA)** Contains component(s) regulated under the Safe Drinking Water Act.**US state regulations****US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Calcium Chlorate (CAS 10137-74-3)

**California Proposition 65**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**International Inventories**

| Country(s) or region        | Inventory name                                                         | On inventory (yes/no)* |
|-----------------------------|------------------------------------------------------------------------|------------------------|
| Australia                   | Australian Inventory of Industrial Chemicals (AICIS)                   | Yes                    |
| Canada                      | Domestic Substances List (DSL)                                         | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)                                          | Yes                    |
| New Zealand                 | New Zealand Inventory                                                  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

**Issue date** 03-09-2023  
**Revision date** 05-08-2024  
**Version #** 04

**HMIS® ratings**

Health: 3  
Flammability: 0  
Physical hazard: 2

**NFPA ratings**

Health: 3  
Flammability: 0  
Instability: 1  
Special hazards: OX

**NFPA ratings****Disclaimer**

The technical information given herein is accurate to the best of our knowledge at the time of preparation, or prepared from sources believed to be reliable. Westlake cannot anticipate all conditions under which this information and our product, or the products of other manufacturers in combination with our product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product; comply with all laws and procedures; assume liability for loss, injury, damage or expense due to improper use; and determine the suitability of the product for your intended use. The information in this sheet is valid for cited regulations published as of the date this document was prepared. Updates may be prepared as the regulations are amended or pending revised information about the product. It is the customer's responsibility to seek updated regulatory information on any specific Westlake product.

All products supplied by Westlake are subject to Westlake's terms and conditions of sale. WESTLAKE MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Westlake, except that the product shall conform to Westlake's specifications.