

## **MATERIAL SAFETY DATA SHEET**

### **SODIUM HYPOCHLORITE**

#### **1. PRODUCT IDENTIFICATION**

|                          |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|
| <b>Synonyms:</b>         | Hypochlorous Acid, Calcium Salt; Losantin; Calcium Hypochlorite: Chlorinated Lime |
| <b>CAS No:</b>           | 7681-52-9/2                                                                       |
| <b>Molecular Weight:</b> | 142.98                                                                            |
| <b>Chemical Formula:</b> | NaOCl                                                                             |
| <b>Product Codes:</b>    | 1378                                                                              |

#### **2. COMPOSITION/INFORMATION OF INGREDIENTS**

| <b>Ingredient</b>   | <b>CAS No</b> | <b>Percent</b> | <b>Hazardous</b> |
|---------------------|---------------|----------------|------------------|
| Sodium Hypochlorite | 7778-54-3     | 12-15%         | Yes              |

#### **3. HAZARD IDENTIFICATION**

##### **Emergency Overview**

**DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. WATER REACTIVE**

|                                  |   |                                             |
|----------------------------------|---|---------------------------------------------|
| <b>Health Rating</b>             | : | 2 – Moderate                                |
| <b>Flammability Rating</b>       | : | 0 – None                                    |
| <b>Reactivity Rating</b>         | : | 3 – Severe (Oxidizer)                       |
| <b>Contact Rating</b>            | : | 2 – Moderate                                |
| <b>Lab Protective Equipment:</b> |   | GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES |
| <b>Storage Colour Code</b>       | : | Yellow (Reactive)                           |



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### **Potential Health Effects**

**Ingestion:**

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea.

**Skin Contact:**

Corrosive. Symptoms of redness, pain, and severe burn can occur

**Eye Contact:**

Corrosive. Contact can cause blurred vision, redness, pain and severe tissue burns.

**Chronic Exposure:**

Repeated exposures to calcium hypochlorite may cause bronchitis to develop with cough and/or shortness of breath.

**Aggravation of Pre-existing Conditions:**

No information found.

## **4. FIRST-AID MEASURES**

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**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**Fire:**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Thermally unstable; at higher temperatures, may undergo accelerated decomposition with release of heat and oxygen.

## **5. FIRE FIGHTING MEASURES**

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### **Explosion:**

Sealed containers may rupture when heated. An explosion can occur if either a carbon tetrachloride or a dry ammonium compound fire extinguisher is used to extinguish a fire involving calcium hypochlorite.

### **Fire Extinguishing Media:**

Use flooding quantities of water as fog or spray. Use water spray to keep fire-exposed containers cool. Avoid direct contact with water; reacts with water releasing chlorine gas. Fight fire from protected location or maximum possible distance. Do not use dry chemical fire extinguishers containing ammonium compounds. Do not use carbon tetrachloride fire extinguishers. Do not allow water runoff to enter sewers or waterways.

### **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full-face piece operated in the pressure demand or other positive pressure mode.

## **6. ACCIDENTAL RELEASE MEASURES**

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Remove all sources of ignition. Keep water away from spilled material. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

### **Spills:**

Remove all sources of ignition. Clean up in manner to minimize contamination with organic material. Do not return material to original container. Place in a fresh container and isolate outside or in a well-ventilated area. Do not seal the container. Flush any residual material with large quantities of water. In the event of a large spill use the emergency telephone number.

## **7. HANDLING AND STORAGE**

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### **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.



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**Shelf Life Limitations:**

Do not store product where the average daily temperature exceeds 35°C / 95°F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in cool, dry and well ventilated area. Prolonged storage at elevated temperatures 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. A chemical reaction with such substances can cause a fire of great intensity.

**Do Not Store at Temperatures Above:**

Average daily temperature of 35°C / 95°F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

## **8. EXPOSURE CONTROL / PERSONAL PROTECTION**

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**Airborne Exposure Limits:**

None established

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

**WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in the work area.



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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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|                           |   |                                                  |
|---------------------------|---|--------------------------------------------------|
| Appearance                | : | clear or yellowish liquid                        |
| Odor                      | : | Chlorine-like odour                              |
| Solubility                | : | Soluble in water; reacts, releasing chlorine gas |
| Specific Gravity          | : | 2.35 @ 20°C                                      |
| pH                        | : | No information found                             |
| % Volatiles by volume     | : | @ 21°C (70°F): 0                                 |
| Boiling Point             | : | No information found                             |
| Melting Point             | : | Decomposes above 177°C (350°F), releasing oxygen |
| Vapor Density (Air+1)     | : | 6.9                                              |
| Vapor Pressure (mm Hg)    | : | Not applicable                                   |
| Evaporation Rate (BuAc+1) | : | No information found                             |

## 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 a Class 5.1 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gasses and spatter. Use copious amounts of water for fires involving this product.

### Conditions to Avoid:

Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 35°C / 95°F. Prevent ingress of humidity and moisture into container or package. Always close the lid.

### Chemical Incompatibility:

This product is chemically reactive with many substances. Including e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.

### Hazardous Decomposition Products:

Chlorine

### Decomposition Temperature:

170 – 180 DEG°C - , 338 – 356 DEG°F - ,



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## 11. TOXICOLOGICAL INFORMATION

Calcium hypochlorite: LD50 oral rat 850 mg/kg. Investigated as a tumorigen and mutagen.

### Cancer Lists

#### Ingredient

Sodium Hypochlorite (7778-54-3)

### NTP Carcinogen

#### Known

No

#### Anticipated

No

#### IARC Category

3

## 12. ECOLOGICAL INFORMATION

### Environment Fate:

No information found.

### Environmental Toxicity:

No information found.

## 13. DISPOSAL CONSIDERATION

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. TRANSPORT INFORMATION

### Domestic (Land, D.O.T)

Proper Shipping Name:

SODIUM HYPOCHLORITE, LIQUID

Hazard Class:

5.1

UN/NA:

1748

Packing Group:

II

### International (Water, I.M.O)

Proper Shipping Name:

SODIUM HYPOCHLORITE, LIQUID

Hazard Class

5.1

UN/NA:

UN1748

Packing Group:

II

### International (Air, I.C.A.O)

Proper Shipping Name:

SODIUM HYPOCHLORITE, LIQUID

Hazard Class

5.1

UN/NA:

UN1748

Packing Group:

II

## 15. REGULATORY INFORMATION

### Chemical Inventory Status

#### Ingredient

Sodium Hypochlorite

Canada

#### TSCA

Yes

Korea

Yes

#### C

Yes

DSL

Yes

#### Japan

Yes

NDSL

No

#### Australia

Yes

Phil

Yes

### Federal, State & International Regulations

#### RQ

No

#### TPQ

No

#### List

No

#### Chem. Catg.

No

#### CERCLA

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#### 261.33 TSCA 8(d)

No

No



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Chemical Weapons Convention: No TSCA 12(b) : No CDTA: No  
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No  
Reactivity: Yes (Pure/Solid)

## **16. OTHER INFORMATION**

**NFPA Ratings:** Health: **3** Flammability: **0** Reactivity: **1** Other: **Oxidizer**

**Label Hazard Warning:**

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED OR INHALED. WATER REACTIVE.

**Label Precautions:**

Keep from contact with clothing and other combustible materials.

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

Do not store near combustible materials.

Do not get in eyes, on skin, or on clothing.

Do not breathe dust or vapor.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Do not contact with water.

**Label Fire Aid:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases get medical attention immediately.