

## Material Safety Data Sheet (MSDS) - Sodium Hypochlorite



### 1-Material Specifications

<b>Material Name</b>	Sodium Hypochlorite Solution
<b>Chemical name</b>	Sodium Hypochlorite
<b>Common Name/ Chemical Family</b>	Aqua Guard Chlorinating Sanitizer, Aqua Guard Bleach, Liquid Chlorine Solution, Liquid Bleach, Hypochlorite, Hypo and Chlorine Bleach./Oxidizing Agent
<b>Use of the substance/mixture</b>	Sanitation
<b>CAS NO.</b>	7681-52-9
<b>EC NO.</b>	231-668-3
<b>NFPA Rating</b>	0,2 and 2

### 2- Physical and Chemical Properties

	<b>Chemical name</b>	<b>Structural Formula</b>	<b>Molar Mass</b>	<b>Melting Point</b>	<b>Boiling Point</b>	<b>Density</b>
1	Sodium Hypochlorite	Na-O-Cl	74.44 g/mol	0°C	110° C	10 lbs. per gallon

	<b>Purity</b>	<b>pH</b>	<b>Solubility in Water</b>	<b>Appearance /Odor</b>	<b>Vapor Density (Air=1)</b>	<b>Vapor Pressure (mmHg)</b>	<b>VOC%</b>
2	Min: 120 g/l	11-14	Completely Soluble	Water clear to a slight greenish-yellow, or light yellow aqueous solution	2.58	14 mm Hg.	0 % -0 g /l

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### 3- Hazardous Ingredients

Chemical Name	Cas Number	TLV	PEL
Sodium Hypochlorite	7681-52-9	0.5 ppm as Cl <sub>2</sub>	1 ppm as Cl <sub>2</sub>

### 4- Hazards of Contact


<b>Damage organs</b>	Eyes, skin
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	<b>Emergency</b>	May cause immediate pain. Exposure to the skin may cause sensitization or other allergic responses. <b>SPEED IS ESSENTIAL!</b>
	<b>Eye</b>	Strongly irritating to eyes. Exposure to vapor can cause tearing, conjunctivitis and burning of the eyes. Eye contact may cause a corneal injury. The severity of the effects depend on the concentration and how soon after exposure the eyes are washed with water. In severe exposure cases, glaucoma, cataracts and permanent blindness may occur.
	<b>Skin</b>	Prolonged and repeated exposure to dilute solutions often causes irritation, redness, pain and drying and cracking of the skin. Human evidence has indicated that an ingredient in this product can cause skin sensitization.
	<b>Inhalation</b>	Strong irritating to mucous membranes in the nose, throat and respiratory tract. Prolonged contact can cause chronic irritation, pulmonary edema and central nervous system depression. Repeated inhalation exposure may cause impairment of lung function and permanent lung damage.
	<b>Ingestion</b>	Corrosive. Can cause severe corrosion of and damage to the gastrointestinal tract (including mouth, throat, and esophagus). Exposure is characterized by nausea, vomiting, abdominal pain, diarrhea, bleeding, and/or tissue ulceration.

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**5- Health and First Aids**

	<b>measures after eye contact</b>	hold eye open and rinse slowly and gently with plenty of water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye for 10-15 minutes. Do not transport victim until the recommended flushing period is completed unless irrigation can be continued during transport. Call a poison control center or medical physician for further treatment advice. Have the product label and/or MSDS with you when calling or going to medical treatment.
	<b>measures after skin contact</b>	take off all contaminated clothing and rinse skin immediately with plenty of water for 15-20 minutes. If irritation persists, repeat flushing. Do not transport victim unless the recommended irrigation period is completed unless flushing can be continued during transport. Call a poison control center or medical physician for treatment advice. Have the product label or MSDS with you when calling or going for medical treatment.
	<b>Inhalation</b>	move expose person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. If breathing is difficult, have trained person administer oxygen. Call a poison control center or medical physician for further treatment advice. Have the product label or MSDS with you when calling or going for medical treatment.
	<b>swallow</b>	call poison control center or medical physician immediately for treatment advice. Have exposed person sip a glass of water if able to swallow, and dilute immediately by giving milk, melted ice cream, starch paste or antacids such as milk of magnesia. Avoid sodium bicarbonate because of carbon dioxide release. <b>DO NOT INDUCE VOMITING, LAVAGE OR ACIDIC ANTIDOTES</b> unless told to do so by poison control center or medical physician. <b>DO NOT</b> give anything by mouth to an unconscious person. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water.


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### 6- Fire /Fighting Measures

	<b>Flash Point</b>	This product does not flash
	<b>Auto Ignition</b>	Not Applicable
	<b>Extinguishing Media</b>	Use agents appropriate for surrounding fire. Foam, dry chemical, carbon dioxide, water fog or spray. If leak or spill has not ignited, use water spray to disperse the vapors and to protect persons attempting to stop the leak.
	<b>Flammable Limits</b>	Not Applicable
	<b>Fire Fighting Procedures</b>	Water spray should be used to cool containers and may be used to knock down escaping vapor. Remove storage vessels from the fire zone
	<b>Unusual Fire and Explosion Hazards</b>	This material is nonflammable but is decomposed by heat and light, causing a pressure build-up which could result in an explosion. When heated, it may release chlorine gas or hydrochloric acid. Vigorous reaction with oxidizable or organic materials may result in fire.


### 7- Stability and Reactivity

	<b>Stability</b>	Sodium hypochlorite solutions decompose slowly at normal temperatures releasing low concentrations of corrosive chlorine gas. Decomposition is influenced by temperature, concentration, pH, ionic strength, exposure to light and the presence of metals.
	<b>Conditions to Avoid</b>	Incompatible materials, light, combustible materials, heat.
	<b>Incompatible Materials</b>	Metals, strong reducing agents, strong acids, amines, ammonia, methanol, ammonium salts, formic acid phenylacetonitrile.
	<b>Hazardous Decomposition Products</b>	Hydrogen chloride, chlorine, sodium oxide.
	<b>Hazardous Polymerization</b>	Has not been reported.


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### 8- Storage and Handling

	<b>Precautions to be taken</b>	Take all precautions to avoid personal contact. Keep container closed except when transferring material. Locate safety shower and eyewash station close to chemical handling area. Store in a cool, dry, well-ventilated area, away from incompatibles and direct sunlight. Keep container properly labeled at all times. Vented containers must be used and must be kept closed when not being used. Long-term storage is impossible without decomposition. Only use containers made from tinted glass, polyethylene & FRP. Keep out of reach of children.
	<b>Other Precautions</b>	Follow label instructions and Precautions.

### 9- personal Protective Equipments

	<b>Engineering control</b>	Full handling precautions should be taken at all times. Provide good room ventilation plus local exhaust at points of emission and low level floor exhaust in immediate handling area. Where engineering controls are not feasible, use adequate local exhaust ventilation wherever mist, spray or vapor may be generated.
	<b>Eye protection</b>	Use chemical safety goggles when there is potential for contact (splashing), faceshield recommended – ANSI Z87.1
	<b>Skin and body protection</b>	Gloves and protective clothing (apron, boots, and bodysuits) made from rubber, vinyl, neoprene or PVC. Standard work clothing closed at the neck and wrist while wearing impervious equipment.

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### 10- Accidental Release Measures

**General Information:** Use proper personal protective equipment.

**Spills/Leaks:** Ventilate enclosed area. Collect product for recovery or disposal. For release to land, contain discharge by constructing dikes or applying inert absorbent; for release to water, utilize damming and/or water diversion to reduce the spread of contamination; and, for release to air, vapors may be suppressed by the use of a water fog. All run-off water must be captured for treatment and disposal. Collect contaminated soil and water, and absorbent for disposal. Notify applicable government authority if release is reportable or could adversely affect the environment. Please follow all Local, State and Federal Laws for clean-up and disposal of all contaminated material.

**Deactivating Chemicals:** Sodium Sulfite, Sodium Thiosulfate and Sodium Bisulfite.

### 11- Disposal Considerations

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Dispose of in accordance with government regulations by treatment in a wastewater treatment system.


### 12- Transportation

Proper Shipping Name	Hazard Class	UN Number	Packaging Group
HYPOCHLORITE SOLUTIONS	8	UN1791	III

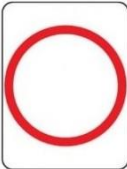
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### 13- Toxicology

	<b>Carcinogenicity</b>	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as carcinogen.
	<b>Mutagenicity</b>	Sodium Hypochlorite has been shown to produce damage to genetic material when tested in vitro. Studies in vivo have shown no evidence of mutagenic potential for this material. It is judged that the risk of genetic damage is insignificant for sodium hypochlorite because of its biological activity, lack of mutagenicity in vivo, and failure to produce carcinogenic response.
	<b>Reproductive</b>	No information available.
	<b>Sensitization</b>	No information available.

### 14- Regulatory

	<b>CERCLA Hazardous Material</b>	Yes
	<b>CERCLA-RQ</b>	100 lb final RQ; 45.4 kg final RQ
	<b>CA Prop 65</b>	No
	<b>SARA Extremely Hazardous Substance</b>	No
	<b>SARA Toxic Chemical:</b>	No
	<b>RCRA-CODE</b>	N/A
	<b>TSCA</b>	listed on the TSCA inventory.

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### 15- Other Information

The information contained on this Material Safety Data Sheet is considered accurate as of the date of publication. It is not necessarily all inclusive nor fully adequate in every circumstance. The suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements. No warranty, express or implied, of merchantability, fitness, accuracy of data, or the results to be obtained from the use thereof is made. The vendor assumes no responsibility for injury or damages resulting from the inappropriate use of this product.