



# Kuehne Chemical Company, Inc.

86 North Hackensack Avenue

South Kearny NJ 07032

(973) 589-0700

**MSDS NUMBER:** KCC – HYPO - 001

**MSDS DATE:** June 4, 2002

**PRODUCT NAME:** SODIUM HYPOCHLORITE SOLUTION

**24 HOUR EMERGENCY PHONE NUMBER:** 973-589-0700

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## I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### HMIS HAZARD RATINGS

HEALTH HAZARD – 3 (Serious)  
FIRE HAZARD – 0 (Minimal)  
REACTIVITY – 1 (Slight)  
WARNING – Corrosive, Oxidizing Agent

Based on the National Paint & Coatings Association HMIS rating system.

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MANUFACTURERS  
NAME AND  
ADDRESS

**KUEHNE CHEMICAL COMPANY, INC.  
86 HACKENSACK AVENUE NORTH  
SOUTH KEARNY, NEW JERSEY 07032-4675**

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CHEMICAL NAME: SODIUM HYPOCHLORITE SOLUTION

CAS NUMBER: 7681-52-9

SYNONYMS/Common Names: Chlorine Bleach, Soda Bleach

CHEMICAL FORMULA: NaOCl

DOT PROPER SHIPPING NAME: Hypochlorite Solutions

DOT HAZARD CLASS: 8

DOT ID NUMBER: UN1791

DOT PACKING GROUP: III

DOT HAZARDOUS SUBSTANCE: RQ 100# (Sodium Hypochlorite)

DOT MARINE POLLUTANT: NA

ADDITIONAL DESCRIPTION  
REQUIREMENT: NA

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## II. HEALTH HAZARDS INFORMATION

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### EMERGENCY AND FIRST AID PROCEDURES

#### EYES:

OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY AND THEN SEEK MEDICAL ATTENTION. IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Washing eyes within one (1) minute is essential to achieve maximum effectiveness. **SEEK MEDICAL ATTENTION IMMEDIATELY.**

#### SKIN:

Flush thoroughly with cool water under shower while removing contaminated clothing and shoes. Discard non-rubber shoes. Wash clothing before reuse. Continue to flush until medical attention arrives.

**SEEK MEDICAL ATTENTION IMMEDIATELY.**

#### INHALATION:

Remove to fresh air. If breathing is difficult, have qualified person administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. **GET IMMEDIATE MEDICAL ATTENTION.**

#### INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of milk. If these are not available, give large quantities of water. If vomiting occurs spontaneously keep airway clear and give more milk or water. GET MEDICAL ATTENTION IMMEDIATELY. Avoid vomiting, lavage or acidic antidotes.

#### NOTE TO PHYSICIAN:

Sodium Hypochlorite is an alkaline corrosive. For exposure by ingestion do not use emesis, lavage or acidic antidotes. Dilute immediately by giving milk, melted ice cream, beaten egg white, starch paste or antacids such as milk of magnesia, aluminum hydroxide gel or magnesium trisilicate gel. Avoid sodium bicarbonate because of carbon dioxide release. Sodium thiosulfate solution may prove beneficial by reducing unreacted material.

### ROUTES OF EXPOSURE

#### INHALATION:

Inhalation of hypochlorous acid fumes may cause severe respiratory tract irritation and pulmonary edema.

#### SKIN:

Skin contact may cause severe irritation and burns.

#### EYE CONTACT:

Eye contact may cause severe irritation, burns, and/or corrosion.

#### INGESTION:

Ingestion may cause pain and inflammation of the mouth and digestive system, burns and perforation of the esophagus or stomach, vomiting, circulatory collapse, confusion, delirium and coma.

### EFFECTS OF OVEREXPOSURE

#### ACUTE:

Corrosive and strongly irritating to the eyes, skin, and respiratory tract. Inhalation of fumes may cause pulmonary edema. Ingestion may cause burns to the mouth and digestive tract and abdominal distress.

#### CHRONIC:

No Data.

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## II. HEALTH HAZARDS INFORMATION (continued)

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### TOXICOLOGY DATA:

The toxicity and corrosivity of Sodium Hypochlorite is a function of concentration. Industrial grades of higher concentrations than household bleach are more toxic and corrosive.

#### Pentahydrate: 45% Concentration

Acute Oral LD <sub>50</sub>	(rat)	8,910 mg/kg
Acute Dermal LD <sub>50</sub>	(rabbit)	10,000 mg/kg
Primary Skin Irritation		Severely irritating
Primary Eye Irritation		Severely irritation

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## III. IMPORTANT COMPONENTS

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<u>CAS Number</u>	<u>Name</u>
7732-18-5	Water

#### EXPOSURE LIMITS

PEL: Not Established  
TLV: Not Established

#### PERCENTAGE

VOL	85
WT	85 - 87

Common Names:

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<u>CAS Number</u>	<u>Name</u>
7681-52-9	Hypochlorous Acid, Sodium Salt

#### EXPOSURE LIMITS

PEL: 1 ppm (as Cl<sub>2</sub>) ceiling  
TLV: 1 ppm (as Cl<sub>2</sub>) TWA

#### PERCENTAGE

VOL	15
WT	12 - 14

Common Names: Sodium Hypochlorite

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<u>CAS Number</u>	<u>Name</u>
1310-73-2	Sodium Hydroxide (NaOH)

#### EXPOSURE LIMITS

PEL: 2 ppm ceiling  
TLV: 2 ppm ceiling

#### PERCENTAGE

VOL	1
WT	1

Common Names: Caustic Soda, Lye

This product has not been listed as carcinogenic by the following agencies: IARC, NTP, and OSHA

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## IV. FIRE & EXPLOSION DATA

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FLASH POINT: NA

AUTOIGNITION TEMPERATURE: NA

FLAMMABLE LIMITS IN AIR - % BY VOLUME - UPPER: NA

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## IV. FIRE & EXPLOSION DATA (continued)

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### EXTINGUISHING MEDIA:

Use water spray, fog, foam, dry chemical, or carbon dioxide or agents suitable for materials in surrounding fire.

### SPECIAL FIRE FIGHTING PROCEDURES:

Use self-contained breathing apparatus and full protective equipment. Acid contamination will produce very irritating fumes similar to chlorine.

### UNUSUAL FIRE AND EXPLOSION HAZARD:

Sodium Hypochlorite or its solutions decompose when heated. Decomposition products may cause containers to rupture or explode. Vigorous reaction is possible with organic materials or oxidizing agents and may result in fire.

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## V. SPECIAL PROTECTION

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### VENTILATION REQUIREMENTS

Provide good general room ventilation plus local exhaust at points of emission.

### SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

#### RESPIRATORY:

NIOSH/MSHA approved respirator, following manufacturer's recommendations should be used as a precautionary measure where airborne contaminants may occur.

#### EYE:

Wear chemical safety goggles plus full face shield to protect against splashing when appropriate.

#### GLOVES:

Wear impervious gloves such as rubber, neoprene or vinyl.

#### OTHER CLOTHING AND EQUIPMENT:

Wear impervious protective clothing including rubber safety shoes. Eye wash facility and emergency shower should be in close proximity.

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## VI. PHYSICAL DATA

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Boiling Point: (@760 mm Hg) Decomposes above 110 °C (230 °F)

Freezing Point:	<u>Weight %</u>	<u>Freezing Point °F</u>
	10	7
	12	- 3
	14	- 14

Vapor Pressure:	<u>Temperature °F</u>	<u>mm Hg</u>	<u>PSIA</u>
	48.2	3.7	0.071
	60.8	8.0	0.15
	68.0	12.1	0.23
	89.6	31.1	0.60
	118.4	100.0	1.93

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## **VI. PHYSICAL DATA** (continued)

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Specific Gravity:(H <sub>2</sub> O = 1)	1.190 - 1.215
Solubility in H <sub>2</sub> O (by Weight)	100%
pH	12 @ 100 g/l
Appearance/Odor:	Colorless to light yellow-green liquid with chlorine like odor.

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## **VII. REACTIVITY DATA**

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### CONDITIONS CONTRIBUTING TO INSTABILITY:

Strong Oxidizer, stability decreases with concentration, heat, light, decrease in pH and contamination by metals.

### INCOMPATIBILITY:

Avoid contamination with heavy metals, reducing agents, organics, ether, ammonia, and acids.

### HAZARDOUS DECOMPOSITION PRODUCTS:

Acid fumes.

### CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:

Material is not known to polymerize.

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## **VIII. HANDLING & STORAGE**

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### HANDLING AND STORAGE PRECAUTIONS:

Do not store adjacent to chemicals that may react if spillage occurs. Comply with DOT regulations when shipped. If closed containers become heated, vent to release decomposition products (mainly oxygen under normal decomposition). Do not mix or contaminate with ammonia, hydrocarbons, acids, alcohols or ethers.

### DO NOT REUSE CONTAINERS:

Product residues may remain in containers. All labeled precautions must be observed. Dispose of container in a manner meeting government regulations.

### PRODUCT DISPOSAL:

Product should be completely removed from containers. Material that cannot be used or chemically reprocessed should be disposed of in a manner meeting government regulations.

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## **IX. ENVIRONMENTAL PROCEDURES**

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### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Do not allow spilled material to enter sewers or streams. Flush with water to dilute as much as possible and pump into polyethylene containers for disposal. Avoid heat and contamination with acid materials. Do not use combustible materials such as sawdust to absorb Sodium Hypochlorite Solution.

### WASTE DISPOSAL METHOD:

Reduce with agents such as bisulfites or ferrous salt solutions. Some heat will be produced. Keep on alkaline side and dilute with copious amounts of water. Main end product is salt water. Comply with all applicable governmental regulations.

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## **X. ADDITIONAL INFORMATION**

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Section 311 of The Clean Water Act lists this product as a hazardous substance, which, if discharged to water, may require immediate response to mitigate danger to public health and welfare. Spills of 100 pounds or more must be reported to the National Response Center at the following number:  
1-800-424-8802

Material is contained on a composite list as required under 101 (14) of CERCLA.

Sodium Hypochlorite Solution is regulated by the USEPA under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) as a pesticide product.

Sodium Hypochlorite Solution produced by KUEHNE CHEMICAL COMPANY, INC. is registered with the USEPA under Registration Number 35317-20001.

NSF CERTIFICATION: This product has been classified as an approved drinking water treatment chemical under ANSI/NSF Standard 60 by Underwriter's Laboratories (reference number: MH17612)

USDA APPROVALS: B-1, D-2, L-1, Q-4 & Fruit and Vegetable washing compounds.

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## **XI. PREPARATION DATA**

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Prepared By: Safety, Health and Environment Department

**1-973-589-0700**

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and KUEHNE CHEMICAL COMPANY, INC. will not be liable for any damages, losses, injuries or consequential damages that may result from the use of or reliance on any information contained herein.

### REFERENCES:

National Institute for Occupational Safety and Health, US Dept. of Health & Human Services, Cincinnati, June, 1994.

Supplier's Material Safety Data Sheets.

Windholz, Martha, Ed, The Merck Index, 11<sup>th</sup> ed., Merck and Co, Inc., Rahway, New Jersey, 1989.

Chlorine Institute Pamphlet 96 (Sodium Hypochlorite Safety & Handling), Edition I, September, 1992

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## WARNING LABEL INFORMATION

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### SODIUM HYPOCHLORITE SOLUTION

Active Ingredient:	Sodium Hypochlorite (NaOCl)	13.15 %	(weight per cent)
	Inert Ingredients:	86.85 %	
Total		100.00 %	

### KEEP OUT OF REACH OF CHILDREN

### DANGER POISON

#### STATEMENT OF PRACTICAL TREATMENT (FIRST AID)

#### IF CONTACT WITH EYES OCCURS:

Flush with water for at least 15 minutes. Get prompt medical attention.

#### IF CONTACT WITH SKIN OCCURS:

Wash with plenty of soap and water.

#### IF SWALLOWED:

Drink large amounts of water. DO NOT induce vomiting. Call a physician or poison control center immediately.

#### PRECAUTIONARY STATEMENTS

#### HAZARDOUS TO HUMANS AND DOMESTIC ANIMALS

#### DANGER:

Corrosive, may cause severe skin and eye irritation or chemical burns to broken skin. Causes eye damage. Wear safety glasses or goggles and rubber gloves when handling this product. Wash after handling. Avoid breathing vapors. Vacate poorly ventilated areas as soon as possible. Do not return until strong odors have dissipated.

#### ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or public waters unless this product is specifically identified and addressed in an NPDES permit. Do not discharge effluent containing this product to sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

#### PHYSICAL OR CHEMICAL HAZARDS

#### STRONG OXIDIZING AGENT:

Mix only with water according to label directions. Mixing this product with chemicals (e.g. ammonia, acids, detergents, etc.) or organic matter (e.g. urine, feces, etc.) will release chlorine gas, which is irritating to eyes, lungs and mucous membranes.

## DIRECTION FOR USE

Reformulators and Repackagers of this product must obtain their own registrations from the United States Environmental Protection Agency (USEPA).

For manufacturing use in the formation of end-use Products:

sanitizers of surfaces (e.g. wood butcher blocks, stainless steel tops, concrete floors, tile walls) or sanitizers of commercial and household laundry; or  
agents to wash or assist in lye peeling of fruits and vegetables; or  
agents to help control micro-organisms on eggs for human consumption, or  
disinfectants of poultry drinking water, or  
disinfectants of human drinking water (emergency, public, individual), swimming pool water, Hubbard immersion tank water, spas, hot tub, hydrotherapy pools, human drinking water systems (e.g. water mains), or  
disinfectants of nonporous hard surfaces (e.g. tile, glass, stainless steel, fiberglass) or  
agents to help control micro-organisms in sewage, waste-water, industrial and pulp and paper process water systems, or  
algacides/slimicides in cooling towers or evaporative condensers, or  
sanitizers of dialysis machines, or  
sanitizers of toilet bowls: or  
agents to help control algae and bacteria in fish and lobster ponds/tanks and conditioning oysters, or  
agents to help control slime on boat bottoms, or  
agents to sanitize and deodorize artificial sand beaches, or  
agents to kill scavenger fish in fish hatchery ponds.

## STORAGE AND DISPOSAL

Store this product in a cool dry area, away from direct sunlight and heat to avoid deterioration. In case of spill, flood areas with large quantities of water. Product or rinsates that cannot be used should be diluted with water before disposal in a sanitary sewer. Empty containers should not be reused, but disposed of in an appropriate manner or returned to point of purchase. Do not contaminate food or feed by storage, disposal or cleaning of equipment.

IN CASE OF:

FIRE:

Use self-contained breathing apparatus and full protective equipment. Use water spray, foam, dry chemical or CO<sub>2</sub>. Fire may liberate toxic gases.

SPILL:

Get protective equipment. Contain spill and pump into marked container for reclamation for disposal. Avoid discharges to sewers and streams. Spills of 100 pounds or more must be reported to the National Response Center at the following number:

**1-800-424-8802**

**IN CASE OF CHEMICAL EMERGENCIES CALL:  
24 HOUR EMERGENCY PHONE (973) 589-0700**