SODIUM HYPOCHLORITE SOLUTION

SHP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Bleach Clorox Javelle water	Water liquid Mixes with water.	Colorless or slightly yellow	Household bleach

Keep people away.
Avoid contact with liquid.
Wear goggles and self-contained breathing apparatus.
Wear rubber gloves, plastic overalls and boots.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Not Flammable.
May cause fire on contact with organic material.
POISONOUS GASES ARE PRODUCED WHEN HEATED.
Cool exposed containers with water.
Wear goggles and self-contained breathing apparatus.
Extinguish with water, foam, dry chemical or carbon dioxide.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
Move victim to fresh air.

LIQUID
Irritating to eyes and skin.
Harmful if swallowed.
Remove contaminated clothing and shoes.
Wash affected skin area.
IF IN EYES flush with plenty of water for 15 minutes.
IF SWALLOWED and victim is CONSCIOUS, have victim drink either milk or milk of magnesia (1 oz.)

Water Pollution

HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials.
Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 5; Caustics
2.2 Formula: NaClO
2.3 IMO/UN Designation: 8.0/1791
2.4 DOT ID No.: 1791
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: 154
2.7 Standard Industrial Trade Classification: 52331

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Rubber gloves, goggles, self-contained breathing apparatus, plastic coveralls and boots.
3.2 Symptoms Following Exposure: INHALATION: Will produce severe bronchial irritation and pulmonary edema. INGESTION: burning of mouth, nausea and vomiting, delirium, coma. EYES & SKIN: can be irritating if contact is maintained.
3.3 Treatment of Exposure: INHALATION: Sips of milk or other demulcent. EYES: Flush with plenty of water for 15 minutes. SKIN: Wash contaminated area with soap and water. INGESTION: Induce vomiting, give water.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: LD50 intraperitoneal mouse 1.58 g/kg The 96 hour LC50 for fathead minnous is 8ppm.
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Esophageal stricture is often mentioned as a posible latent complication of hypochlorite poisoning.
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations.
3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: Not flammable
4.2 Flammable Limits in Air: Not flammable.
4.3 Fire Extinguishing Agents: Chemical, CO_2, foam, or water in flooding quantities.
4.4 Fire Extinguishing Agents Not to Be Used: Amines and oxidizable material such as oxalic acid. May produce explosive chloroamines with amines.
4.5 Special Hazards of Combustion Products: Store in a cool, dark place, away from combustible materials. Emits chlorine gas when burned.
4.6 Behavior in Fire: May decompose, generating irritating chlorine gas.
4.7 Auto Ignition Temperature: Not pertinent
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Not pertinent
4.10 Adiabatic Flame Temperature: Not pertinent
4.11 Stoichometric Air to Fuel Ratio: Not pertinent.
4.12 Flame Temperature: Not pertinent
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction.
5.2 Reactivity with Common Materials: Unstable in air unless mixed with sodium hydroxide. Reacts with amines to form normal chloroamines, which are explosive.
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Sodium disulfite; hypo isulfite.
5.5 Polymerization: Will not occur
5.6 Inhibitor of Polymerization: Not pertinent

6. WATER POLLUTION

6.1 Aquatic Toxicity:
At 0.02 ppm residual Cl - 50% inhibition of phytoplankton growth
500 mg/l/96hr/LC_{50} fresh and salt/fathead minnows and grass shrimp.
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available
6.4 Food Chain Concentration Potential: Negative. Unlikely to accumulate in the food chain.
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 211
Human Oral hazard: 2
Human Contact hazard: II/I
Reduction of amenities: XX/X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Many Grades
7.2 Storage Temperature: Cool
7.3 Inert Atmosphere: Currently not available
7.4 Venting: Currently not available
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
7.7 Barge Hull Type: 3

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Corrosive material
8.2 49 CFR Class: 8
8.3 49 CFR Package Group: II or III depending upon available chlorine.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification: Not listed
8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Solid
9.2 Molecular Weight: 74.44
9.3 Boiling Point at 1 atm: Decomposes
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.093 for 5% solution
9.8 Liquid Surface Tension: Not pertinent
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Not pertinent
9.13 Heat of Combustion: Not pertinent
9.14 Heat of Decomposition: Currently not available
9.15 Heat of Solution: Currently not available
9.16 Heat of Polymerization: Currently not available
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Data not availabel
9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
32	29.300		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE		CURRENTLY NOT AVAILABLE