



Material Safety Data Sheet

1. IDENTIFICATION

PRODUCT NAME: H2-SHP 6-16%

CHEMICAL NAME/SYNONYMS: Liquid Chlorine solution, Liquid bleach, Hypochlorite, Bleach,

CHEMICAL FAMILY: Hypochlorite

CHEMICAL FORMULA: NaOCl in water

For emergencies call Chemtrec at 1-800-424-9300

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW:

This product is irritating to the eyes, respiratory system, and skin.

POTENTIAL HEALTH EFFECTS:

EYES: May cause severe pain, blurred vision, tearing and swelling. Concentrated solutions may cause burning

SKIN: May cause moderate skin irritation. Contact with concentrated solutions may bleach the skin and cause redness, pain, blistering, itchy eczema and possible chemical burns.

INGESTION: May cause pain and inflammation of the mouth, throat, esophagus, and stomach. Can cause erosion of mucus membranes, especially in the stomach. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting, circulatory collapse, confusion, delirium, coma, and collapse. Swallowing large quantities can cause death.

INHALATION: Vapors may cause slight to severe irritation of the respiratory tract. High concentrations may cause sore throat, blistering, delayed pulmonary edema (swelling of lung tissue) and shortness of breath. Never mix with any other chemicals. If sodium hypochlorite is mixed with ammonia or other chemicals, evolution of chlorine or chlorine based compounds results. These gases can produce pulmonary edema.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CAS #</u>	<u>COMPONENT</u>	<u>PERCENT</u>
7681-52-9	sodium hypochlorite	6-16
7647-14-5	sodium chloride	5-13
1310-73-2	sodium hydroxide	0.2-4.0
7732-18-5	water	balance

4. FIRST-AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN: Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse clothing until thoroughly cleaned. Get medical attention.

INGESTION: **Do not induce vomiting.** Rinse mouth with water. If conscious, give large quantities of water or milk and get immediate medical attention. Do not give baking soda or acid antidotes. Never give anything by mouth to an unconscious person.

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

5. FIRE-FIGHTING MEASURES

GENERAL FIRE HAZARDS:

UPPER FLAMMABLE LIMIT (UFL): N/A

LOWER FLAMMABLE LIMIT (LFL): N/A

METHOD USED: N/A

FLASH POINT: nonflammable

FLAMMABILITY CLASSIFICATION: N/A

AUTO IGNITION: N/A

EXTINGUISHING MEDIA: Use media appropriate for surrounding area.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS: Response to this material requires the use of self-contained breathing apparatus (SCBA). Additional protective clothing must be worn to prevent personal contact with this material. These items include, but are not limited to boots, gloves, hard hat, impervious clothing, i.e. chemically impermeable suit. Use water to cool containers exposed to fire. On small fire, use dry chemical, carbon dioxide or water spray on large fires, use water in flooding quantities as fog. In case of fire, hazardous concentrations of chlorine may be formed.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers of this material can explode as oxygen is liberated under high heat or fire conditions. Toxic fumes similar to chlorine gas are liberated by contact with acids, ammonia, some detergent cleaners, organic materials, oxidizing agents and some reducing agents. Reacts to form explosive products with amines, ammonia or ammonium salts, methanol, aziridine. Explosive reaction with formic acid (@55C), phenyl acetonitrile, ethylene amine. Highly exothermic reactions with organic materials and oxidizable materials may cause fires in adjacent, heat sensitive material: Do not store where contact may result with organic or oxidizable materials, e.g., sawdust, paper waste, or others.

The NFPA does not rate Hypochlorite UN1791. With the help of the Chlorine Institute, we have assigned the following estimated rating based on NFPA standards:

NFPA CODES: HEALTH: 3 FIRE: 0 REACTIVITY: 1 SPECIAL HAZARD:
CORROSIVE

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

ACTIONS TO TAKE FOR SPILLS OR LEAKS: Wear alkali-resistant slicker suit and complete protective equipment including goggles, rubber gloves, rubber boots, and a self-contained breathing apparatus in the pressure demand mode or a supplied-air respirator. If the spill or leak is small, a full face-piece air purifying cartridge respirator equipped with acid gases/mists filters may be satisfactory. In any event, always wear eye protection. For small spills or drips, mop or wipe up and dispose of in DOT-approved waste containers. For large spills, contain by diking with soil or other non-combustible absorbent material and dispose according to federal or local regulations. Keep non neutralized material out of sewers, storm drains, surface waters, and soil. This product is very toxic to aquatic life.

DISPOSAL METHODS: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

NOTE: Empty containers can have residues, gases and mists are subject to proper waste disposal, as above

For all transportation accidents, call Chemtrec at 800-424-9300
Reportable Quantity: 100 lbs. (Per 40 CFR 302.4)

7. HANDLING AND STORAGE

HANDLING: Do not use pressure to empty container.

STORAGE: Store in a cool, dry, well-ventilated place away from incompatible material. Keep container tightly close and vented when not in use. Store below 85°F and away from acids, oxidizable materials or organics. Do not store on wooden floors.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES: For elemental chlorine, the OSHA PEL is .5PPM TWA and 1 PPM STEL; the ACGIH TLV is 1 PPM TWA, with a STEL of 3 PPM.

Component	Exposure Limits, MG/M3		
	OSHA PEL	ACGIH TLV	Other Limit
sodium hypochlorite	None	None	None
sodium chloride	None	None	None
sodium hydroxide	2mg/m3	2mg/m3	None
water	None	None	None

PERSONAL PROTECTION:

VENTILATION: Local exhaust ventilation is recommended if vapors, mists or aerosols are generated. Otherwise, use general exhaust ventilation.

EYES AND FACE: Wear chemical goggles and full face-shield unless a full face-piece respirator is also worn. Do not wear contacts.

CLOTHING: Wear rubber boots, gloves and apron.

RESPIRATOR: Use self-contained breathing apparatus in the pressure demand mode or a supplied-air respirator. A full face-piece air purifying cartridge respirator equipped with acid gases/mists filters may be satisfactory.

GENERAL: An eyewash and safety shower should be nearby and ready for use.

9. PHYSICAL AND CHEMICAL PROPERTIES

	6%NaOCl	11%NaOCl	13%NaOCl
Molecular Weight:	74.45	74.45	74.45
Specific Gravity:	1.115	1.1173	1.211
pH:	12.31	12.95	13.05
Freeze Point in °F:	20	-1	-12
Boiling Point in °F:	219	222	225
Viscosity @ 77 °F:	1.10	1.53	1.83
Vapor pressure @ 50°C (KPa)	6	6.2	7.5
Vapor pressure @ 55°C (KPa)	7.63	7.63	9.34
Vapor density:	N/A	N/A	N/A
Evaporation Rate:	N/A	N/A	N/A
Water solubility:	Yes		
Color:	Clear Yellow		
Odor:	Pungent Chlorine Bleach Odor		
Appearance:	Banana-Colored Clear Liquid		

10. STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION: Hazardous Polymerization will not occur

CHEMICAL STABILITY: Product is stable under usual application conditions. Stability decreases with increased concentration heat, light exposure, and decrease in pH and contamination with heavy metals such as nickel, cobalt, copper and iron. Decrease in pH and/or contamination can result in evolution of chlorine gas.

MSDS**H2-SHP**

CONDITIONS TO AVOID: Excessive heat, exposure to light, reduced alkalinity, and contamination of any kind.

INCOMPATIBILITY: Materials to avoid: ether, ammonia, acids, oxidizing agents, reducing agents, oxidizable materials, chemical reaction will occur allowing hazardous gases to evolve.

HAZARDOUS DECOMPOSITION: HOCL, Chlorine, HCL, NACL, Sodium Chlorate, and oxygen which depend on pH, temperature and time.

11. TOXICOLOGICAL INFORMATION

ORAL: 5% solution rat LD50 = 13 G/KG
12.5% solution rat LD50 = 5G/KG

DERMAL: rat LD50 > 3.0 G/KG

INHALATION: N/A

CARCINOGENICITY: This material is not considered to be a carcinogen by the National Toxicology Program, the International Agency for Research of Cancer, or the Occupational Safety and Health Administration.

12. ECOLOGICAL INFORMATION**13. DISPOSAL CONSIDERATIONS**

Dispose of waste materials according to all federal, state and local regulations.

14. TRANSPORT INFORMATION

This material is regulated as a DOT Hazardous Material.

US DOT INFORMATION:

UN/NA #	Shipping Name Hazard	Class	Packing Group	ERG	RQ
UN1791,	Hypochlorite Solution,	8,	II,	154	100lbs

15. REGULATORY INFORMATION

TSCA Inventory Status: Listed on inventory

SARA-313 Listed Chemical: No

RCRA Hazardous Waste No.: N/A

CERCLA: Yes

EPA Pesticide Registration Number: 813-15

NSF Maximum use Level for Potable Water (Standard 60): 84 mg/l

16. OTHER INFORMATION

Do not use ingredient information and/ or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from H2O Technical Services.

DISCLAIMER:

We believe that the information in this MSDS is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily either all-inclusive or fully adequate in every circumstance. Also, these suggestions should not be confused with or followed in violation of applicable laws, regulations, rules or insurance requirements.

NO WARRANTY IS MADE, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.