MATERIAL SAFETY DATA SHEET

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1. Substance Identity and Company Contact Information

SUBSTANCE: **SODIUM HYPOCHLORITE 2-6%**

SUPPLIER'S NAME: Vertex Chemical Corporation
11685 Manchester Road
St. Louis, Missouri 63131
(314) 471-0500

E-mail: vertexchem@vertexchem.com
Web Site: www.vertexchemical.com

24 HOUR EMERGENCY TELEPHONE NUMBERS:

314-471-0500	VERTEX CHEMICAL CORPORATION
1-800-424-8802	NATIONAL EMERGENCY RESPONSE CENTER
1-800-424-9300	CHEMTREC – Call CHEMTREC only in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

TRADE NAME AND SYNONYMS: Liquid Bleach, Soda Bleach, CSS-5® (EPA Reg. No. 9616-10), Javel Water Bleach, Super Power Bleach

CAS # 7681-52-9 **FORMULA:** NaOCl **CHEMICAL FAMILY:** Hypochlorites; inorganic salt **MOLECULAR WEIGHT**: 74.45

NSF: Vertex Chemical Corporation, 3101 Carondelet Road, Dupo, IL: Sodium hypochlorite registered with NSF International. Maximum Use Dosage is 210 mg/L (CSS-5®). Vertex Chemical Corporation, 2825 Channel Avenue, Memphis, TN 38113: Sodium hypochlorite certified with NSF International, Maximum Use Dosage is 260 mg/L.

REVISION DATE: October 7, 2010

2. Chemical Composition and Data on Components

COMPONENT	CAS NO.	% by weight	EXPOSURE LIMITS, MG/M3		
			OSHA PEL	ACGIH TLV	OTHER LIMIT
SODIUM HYPOCHLORITE	7681-52-9	2-6	NONE	NONE	NONE
SODIUM CHLORIDE	7647-14-5	1-7	NONE	NONE	NONE
WATER	7732-18-5	BALANCE	NONE	NONE	NONE

3. Hazards Identification

NFPA Rating: (Scale 0-4) Health - 3 Fire - 0 Reactivity - 0 Specific Hazard – Irritant

The National Fire Protection Association does not rate Hypochlorite UN1791. Vertex, with the help of the Chlorine Institute, has assigned the following estimated rating based on NFPA standards for hypochlorite with more than 16% available chlorine by weight:

Primary Routes Of Exposure: Skin or eye contact, inhalation. Avoid eye or skin contact, inhalation.

Signs And Symptoms Of Exposure:

Inhalation	Inhalation of fumes or mists causes respiratory tract irritation and irritation of mucous membranes. If sodium hypochlorite is mixed with ammonia or other chemicals, evolution of chlorine or chlorine based compounds results. These gases can produce pulmonary edema. **Never mix with any other chemicals.** Accidental mixing may cause dangerous conditions that could cause injury to personnel and/or damage to property or to environment.
Eye Contact	Liquid and mists may severely irritate or damage the eyes.
Skin Contact	The liquid will irritate the skin, causing redness and possibly inflammation, or chemical burns to broken skin.
Swallowed	Mists and liquid are extremely corrosive to the mouth and throat, mucous membranes and 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.

Effects of Overexposure:

Acute	Acute Irritation effects increase with strength of solution and time of exposure. Prolonged or repeated exposure can lead to constant irritation of eyes and throat. Prolonged or repeated contact may cause dermatitis and sensitization.
Chronic	No known chronic effects.

Medical Conditions Generally Aggravated By Exposure: Asthma or other pre-existing lung/respiratory illnesses.

4. First Aid Measures

If Inhaled	Remove to fresh air. Give artificial respiration if not breathing. Administer Oxygen if breathing is difficult. Get immediate medical attention.
In Case Of Eye Contact	Immediately flush eyes thoroughly and continue to repeatedly flush eyes with constantly running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get immediate medical attention.
In Case Of Skin Contact	Immediately flush skin thoroughly and continue to repeatedly flush skin with constantly running water for 15 minutes. Remove contaminated clothing and shoes; wash before reuse. Get immediate medical attention.
If swallowed	Do not induce vomiting. If conscious, give water or milk, or milk of magnesia. Do not give baking soda or acid antidotes. Do not give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

5. Fire-Fighting Measures

Flash Point, Deg F: Not Flammable
Autoignition Temperature: N/A **Method Used:** N/A
Flammable Limits In Air, %: **Lower:** N/A **Upper:** N/A
Flammable Limits (% by volume): **Lower Explosive level**: LEL N/A **Upper Explosive Limit:** UEL N/A

Extinguishing Media: This material is not combustible. Use extinguishing media appropriate for surrounding fire.

Special Fire Fighting Procedures: Fire fighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to fire.

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 (@ 55°C), phenyl acetonitrile, ethylene amine. See Handling and Storage Section for TLV of elemental chlorine. Highly exothermic reactions with organic materials and oxidizable materials may cause fires in adjacent, heat sensitive materials: Do not store where contact may result with organic or oxidizable materials, e.g., sawdust, paper waste, or others.

6. Accidental Release Measures

Action To Take For Spills Or Leaks: For bulk spills or in confined areas without proper ventilation wear alkali-resistant slicker suit and complete protective equipment including 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. Comply with all applicable governmental regulations on spill reporting, and handling and disposal of waste.

7. Handling and Storage

Follow label instructions for proper handling of household bleach.

Storage and Handling Precautions: Store in a cool, dry, well-ventilated place away from incompatible materials. Keep container tightly closed and vented when not in use. **Do not use pressure to empty container.** Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Store in original containers only at temperatures below 85° F. Do not store near acids, oxidizable materials, or organics. Do not store on wooden floors. **ATTENTION:** When empty, the container may still be hazardous. Because containers, even after they have been emptied, still retain product residues (vapor, liquid or solid), all labeled hazard precautions MUST BE OBSERVED. If "emptied" product containers of 110 gallons or greater volume are to be shipped, DOT requires the containers be triple rinsed (or equivalent) to remove any residue and DOT placards be removed or covered with plain placards before they can be shipped as empty containers.

Repair and Maintenance Precautions: None

Other Precautions: Do not mix or contaminate this product with ammonia, acids, hydro-carbons, alcohols, ethers, reducing agents, cleaning agents or other products which may liberate chlorine or other toxic vapors. For elemental chlorine, the OSHA PEL is .5 PPM TWA and 1 PPM STEL; the ACGIH TLV is 1 PPM TWA, with a STEL of 3 PPM. This product degrades with age. Use it within one month of receipt. It is a violation of federal law to use this product in a manner inconsistent with its labeling.

8. Exposure Controls and Personal Protection

Ventilation	Local mechanical exhaust ventilation capable of minimizing emissions at the point of use.
Respiratory Protection	Wear a NIOSH-approved respirator appropriate for the vapor or mist concentration at the point of use. Appropriate respirators may be a full face-piece or a half mask air-purifying cartridge respirator equipped for acid gases/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.
Eye Protection	Chemical goggles and full face-shield unless a full face-piece respirator is also worn. It is generally recognized that contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury. In a laboratory situation, where running water is immediately available and an eyewash nearby, for handling of sixteen (16) ounces or less of product, safety glasses are acceptable eye protection.
Protective Clothing	Long-sleeved shirt, trousers, rubber boots, rubber gloves, and rubber apron. In a laboratory situation, where running water is immediately available and an eyewash nearby, for handling of sixteen (16) ounces or less of product, rubber gloves can be omitted. Hands should be rinsed immediately until slick feeling is gone from skin if sodium hypochlorite exposure occurs.
Other Protective Measures	An eyewash and safety shower should be nearby and ready for use.

9. Physical and Chemical Properties

Concentration	2-6% NaOCl
Specific Gravity	1.03 - 1.12
pH	11.0 - 12.3
Freeze Point, °F	20-25°F
Boiling Point, °F	212-219°F
Viscosity @ 77°F (centistokes)	1.08 - 1.10

Vapor Pressure @ 100°F (Mm HG)	40
Vapor Pressure @ 55°C (KPa)	8.29
Vapor Density	NA
Evaporation Rate	NA
Color	Clear Yellow
Odor	Pungent Chlorine Bleach Odor

10. Stability and Reactivity

Reactivity: Stable under normal use and storage conditions. **Polymerization:** Will Not Occur

Stability decreases with increased concentration, heat, light exposure, decrease in pH and contamination with heavy metals such as nickel, cobalt, copper and iron. DECREASE IN pH SUCH AS BY MIXING WITH OTHER THAN WATER, AND CONTAMINATION WITH ITEMS MENTIONED BELOW AS INCOMPATIBLE CAN RESULT IN EVOLUTION OF CHLORINE (TOXIC) GAS.

Strong hazardous reactions: Reacts with other household chemicals such as toilet bowl cleaners, pool/hot tub chemicals, peroxides brick and concrete cleaners, insecticides, solvents, windshield wash, gasoline, fuels, rust removers, vinegar, acids or ammonia containing products to produce hazardous gases, such as chlorine and other chlorinated species.

CONDITIONS TO AVOID: EXCESSIVE HEAT, EXPOSURE TO LIGHT, REDUCED ALKALINITY, AND CONTAMINATION OF ANY KIND. REDUCED ALKALINITY OR CONTAMINATION CAN RESULT IN EVOLUTION OF CHLORINE (TOXIC) GAS.

Incompatible Materials To Avoid: Ether, ammonia compounds, hydrogen peroxide, all acids, alum, oxidizing agents, reducing agents, human or animal waste, oxidizable or combustible materials such as wood, cloth or organic materials, organic chemicals such as solvents and solvent based cleaning compounds, fuels and fuel oils, amines, methanol, propane, organic polymers, ethylene glycol, insecticides, heavy metals such as iron, copper, magnesium, aluminum, tin, steel, stainless steel, carbon steel, manganese, zinc, chromium, nickel, cobalt and their alloys, sodium sulfite, sodium bisulfite, sodium hydrosulfite, sodium thiosulfate. DO NOT MIX THIS PRODUCT WITH ANY OF THE FOREGOING OR HAZARDOUS GASES CAN RESULT.

Hazardous Decomposition Products: HOCL, Chlorine, HCL, NACL, Sodium Chlorate, and oxygen which depend on pH, temperature and time.

11. Toxicological Information

Oral: For 5% Solution Rat LD50 = 13 G/KG
For 12.5% solution rat LD50 = 5 G/KG

Dermal: Rat LD50 >3.0 G/KG
Inhalation: No Data Available

Toxicity Data: The toxicity and corrosivity of this material is a function for concentration and pH. This material is irritating and may be corrosive to all tissue. Inhalation may cause coughing, choking, irritation and pulmonary edema. Eye contact may be irritating or corrosive with permanent damage (blindness). Skin contact may be irritating and corrosive. Long term skin exposure may result in dermatitis. Ingestion is not a normal route of exposure. Ingestion may cause irritation, corrosion of gastrointestinal tract, pain and vomiting.

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

This product is very toxic to aquatic life.

13. Disposal Considerations

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 and are subject to proper waste disposal, as above.

14. Transport Information

US DOT 49 CFR 173.136:
This product does not meet the standard of a hazardous material.
"Hypochlorite solution" Irritant.

15. Regulations

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state and local regulations.

TSCA Inventory Status: Listed on inventory.
SARA - 313 Listed Chemicals: No
RCRA Hazardous Waste No.: N/A
CERCLA: Yes
Reportable Quantity: 100 pounds dry weight

Vertex® Sodium Hypochlorite is regulated under many federal and local laws, including OSHA, TSCA, RCRA, FIFRA, CERCLA and EPCRA. It is NOT on the list of Extremely Hazardous Substances, 40 CFR Part 355 Appendix A, nor on the "337 Toxic Chemicals" list, 40 CFR 372.

EPA pesticides regulations apply to Vertex registered product and EPA registration is required when used to disinfect or for sanitization purposes.

16. Other Information

Vertex Chemical Corporation ("Vertex") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Vertex makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Vertex's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

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