VERTEX
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MATERIAL SAFETY DATA SHEET

PRODUCT NAME: SODIUM HYPOCHLORITE 6–16% DATE: 03/07/08

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

REGULAR TELEPHONE NUMBER: Dupo, IL (618) 286-5207
Camanche, IA (563) 243-2000
Memphis, TN (901) 775-1382

DATE REVIEWED: 03/07/08

EMERGENCY TELEPHONE NUMBER: (314) 471-0500 St. Louis

1-800-424-9300 CHEMTREC CALL CHEMTREC ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS.

NATIONAL EMERGENCY RESPONSE CENTER: 1-800-424-8802

SECTION I. PRODUCT IDENTIFICATION

TRADE NAME AND SYNONYMS: Liquid Bleach, Soda Bleach, VERTEX CSS-6® (EPA Reg. No. 9616-11), VERTEX CONCENTRATE® (EPA Reg. No. 9616-8), VERTEX CSS-10® (EPA Reg. No. 9616-8), VERTEX CSS-12® (EPA Reg. No. 9616-7), VERTEX Germicidal Ultra Bleach (EPA Reg. No. 9616-13), Tundra Ultra Bleach.

CHEMICAL FAMILY: Oxidizing Agent (Hypochlorite) [will readily produce a molecular alteration when in contact with certain chemicals/materials (see reactivity data.)]

CAS NO. 7681-52-9 **FORMULA:** NaOCl **MOLECULAR WEIGHT:** 74.45

SHIPPING NAME AND HAZARDOUS CLASS-(DOT): Hypochlorite solution, 8 Corrosive Material, UN1791, PG III, RQ (Sodium Hypochlorite), ORM-D (when packed in 1-gallon containers)

NSF: Vertex Chemical Corporation, 3101 Carondelet Road, Dupo, IL 62239; Vertex Chemical Corporation, 2825 Channel Ave, Memphis TN 38113; Vertex Chemical Corporation 2619 Camanche Industrial Park Drive, Camanche, IA 52730: Sodium Hypochlorite registered with NSF International, Maximum Use Dosages are 175 mg/L (CSS-6®), 105 mg/L (CSS-10® and VERTEX CONCENTRATE®), and 84 mg/L (CSS-12®).

SECTION II. EMERGENCY RESPONSE INFORMATION

HEALTH HAZARDS: See Page 2, Section VI

FIRE OR EXPLOSION: See Page 3, Section IX

IMMEDIATE PRECAUTIONS: WASH FROM EYES: See Page 2, Section V, First Aid;
See Page 3, Section X, Hazardous Reactivity;
See Page 4, Section XI, Spill, Leak & Disposal Procedures

SPILLS OR LEAKS: See Page 4, Section XI, Spill, Leak & Disposal Procedures

FIRST AID: See page 2, Section V

SECTION III. COMPONENTS

COMPONENT	CAS NO.	% by weight	EXPOSURE LIMITS, MG/M3			HAZARD
			OSHA PEL	ACGIH TLV	OTHER LIMIT	
SODIUM HYPOCHLORITE	7681-52-9	6-16	NONE	NONE	NONE	CORROSIVE/OXIDIZER
SODIUM CHLORIDE	7647-14-5	5-13	NONE	NONE	NONE	NONE
SODIUM HYDROXIDE	1310-73-2	0.2-4.0	2MG/M3	2MG/M3	NONE	CORROSIVE
WATER	7732-18-5	BALANCE	NONE	NONE	NONE	NONE

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618-286-5207 314-894-2655

CAMANCHE, IOWA
563-243-2000

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SECTION IV. PHYSICAL PROPERTIES

Concentration	6% NaOCl	11% NaOCl	13% NaOCl
Molecular Weight	74.45	74.45	74.45
Specific Gravity	1.115	1.173	1.211
pH	12.31	12.95	13.05
Freeze Point, °F	20°	-1°F	-12°F
Boiling Point, °F	219°F	222°F	225°F
Viscosity @ 77°F (centistokes)	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	NA	NA	NA
Evaporation Rate	NA	NA	NA
Solubility	Soluble in Water		
Color	Clear Yellow		
Odor	Pungent Chlorine Bleach Odor		
Appearance	Banana-Colored Clear Liquid		

SECTION V. 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.

SECTION VI. HEALTH HAZARD INFORMATION

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.**
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.

Chronic Effects of Exposure: 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.

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

SECTION VII. TOXICITY DATA

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

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.

Other Data: None

SECTION VIII. PERSONAL PROTECTION

Ventilation	Local mechanical exhaust ventilation to minimize exposure to vapors or mist 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.

SECTION IX. FIRE AND EXPLOSION INFORMATION

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 Special Precautions 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.

NFPA Rating: *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:*

Health - 3 Fire - 0 Reactivity - 1 Specific Hazard – Corrosive

SECTION X. HAZARDOUS REACTIVITY

Stability: Stable **Polymerization:** Will Not Occur

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 (TOXIC) GAS.

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.

STRONG OXIDIZING AGENT: in contact with the following incompatible, oxidizable materials, chemical reaction will occur allowing hazardous gases to evolve.

Incompatible Materials To Avoid: Ether, ammonia, acids, oxidizing agents, reducing agents, oxidizable or combustible materials such as wood, cloth or organic materials, heavy metals such as iron, copper, magnesium, aluminum, tin, manganese, zinc, chromium, nickel, and their alloys. 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.

SECTION XI. SPILL, LEAK AND DISPOSAL PROCEDURES

Action 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.

Comply with all applicable governmental regulations on spill reporting, and handling and disposal of waste.

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.

SECTION XII. SPECIAL PRECAUTIONS

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 Degrees Fahrenheit. Do not store near acids, oxidizable materials, or organics. Do not store on wooden floors.
Repair and Maintenance Precautions: None
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.
Other Precautions: Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they were full. Do not mix or contaminate this product with ammonia, acids, hydro-carbons, alcohols, ethers, reducing agents, oxidizers, 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. EPA pesticides regulations apply, and EPA registration is required when used for disinfecting or sanitation purposes. THIS PRODUCT IS LISTED ON THE TOXIC SUBSTANCES CONTROL ACT (TSCA) INVENTORY OF CHEMICAL SUBSTANCES.

SECTION XIII. REGULATORY INFORMATION

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

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.

ORM-D Regulation: Vertex packages Sodium Hypochlorite 3% NaOCl to 12.5% NaOCl in 4x1 gallon and 6x1 gallon packages, which is considered a consumer commodity and meets the limited quantity definition and the definition of an ORM-D. See: 49 CFR 171.8, 173.144, 172.101, 173.150 through 173.156 and 173.306 for more information.

SECTION XIV. NOTICE

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.
END OF MSDS.